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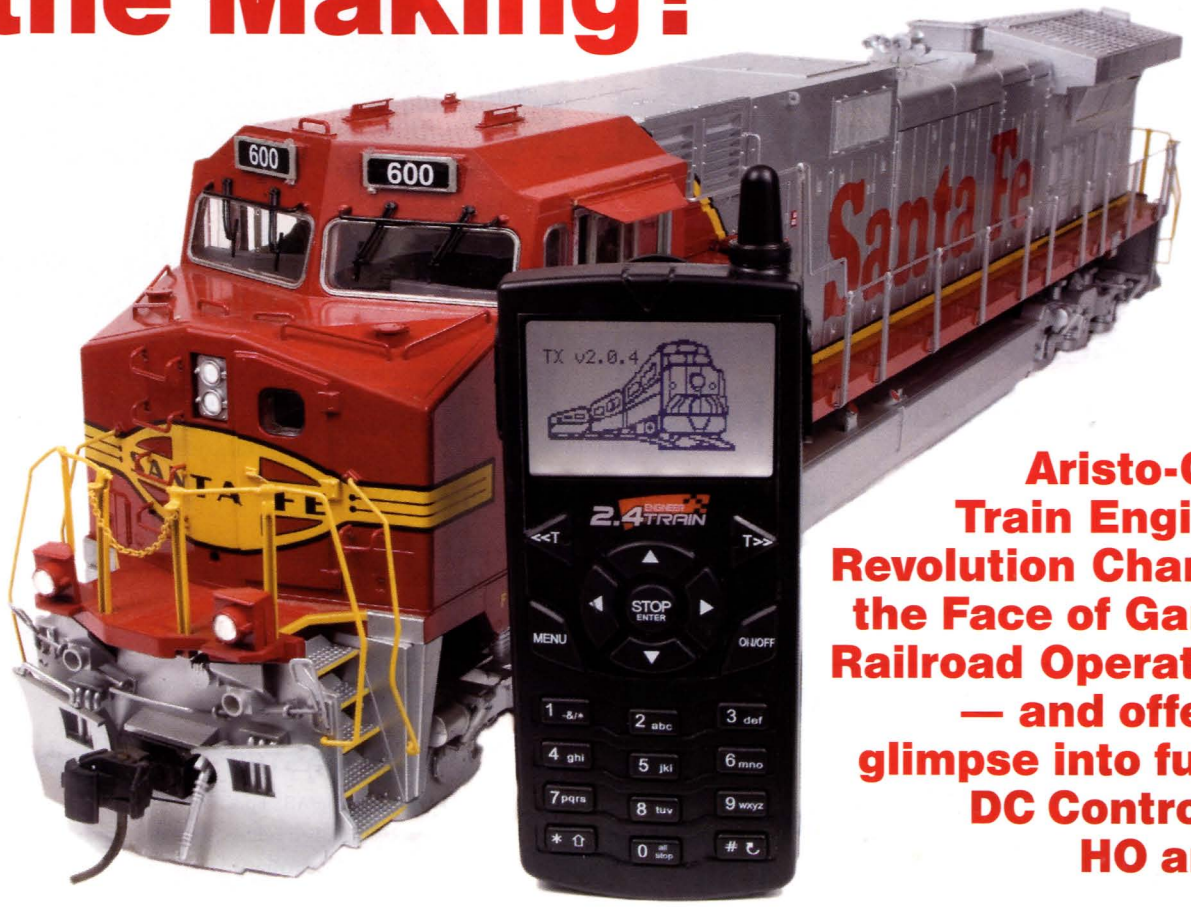

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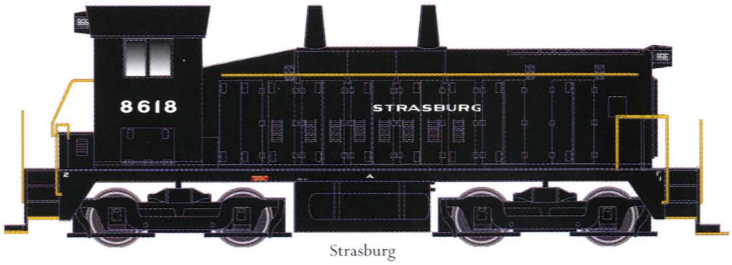

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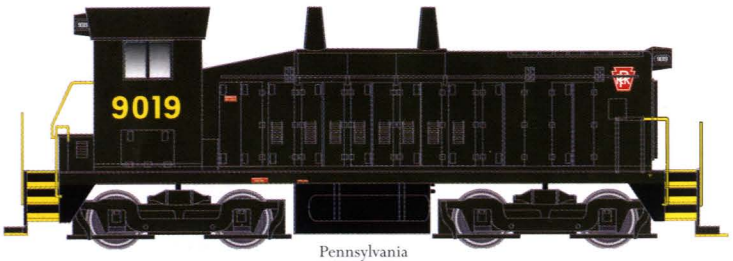

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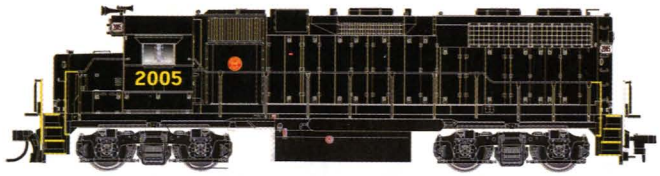
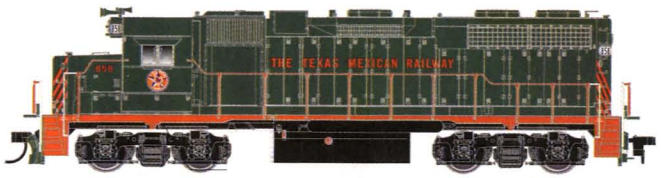


Pennsylvania Reading Seashore Lines



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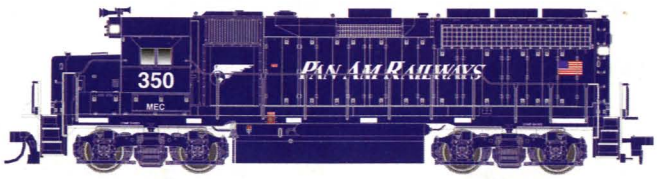

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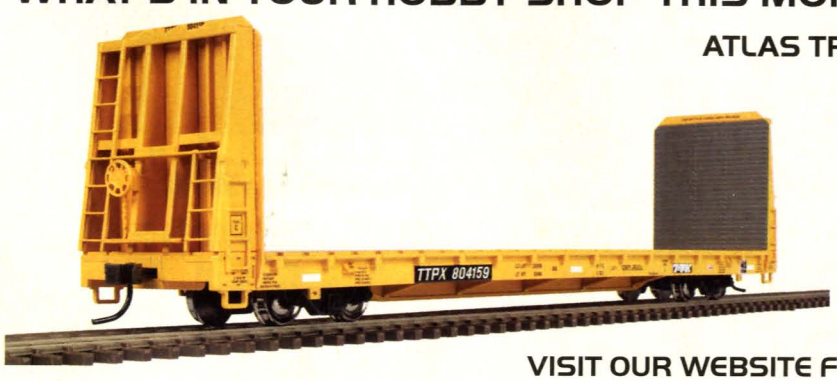

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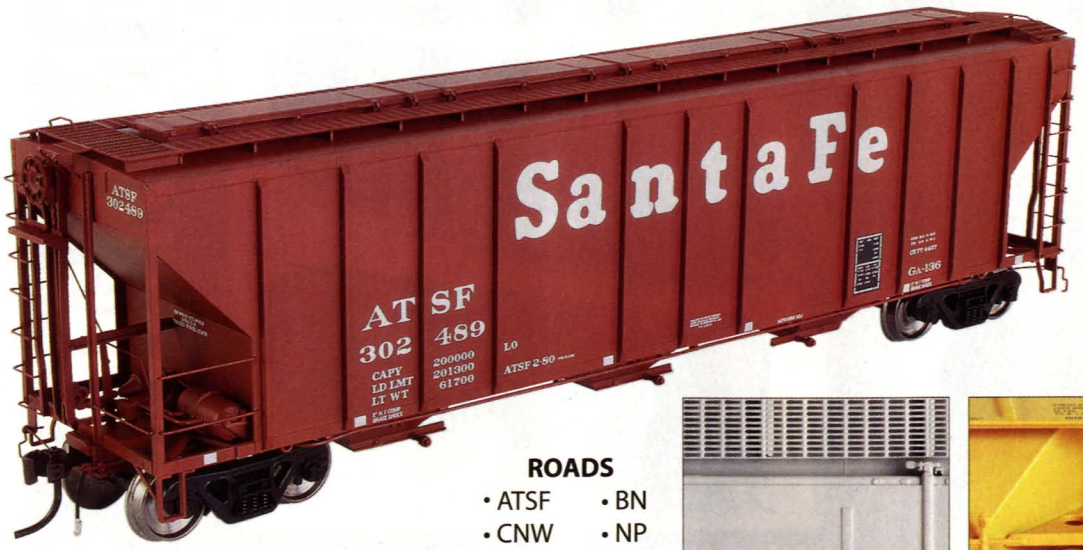

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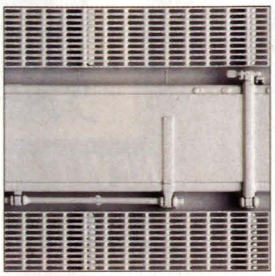

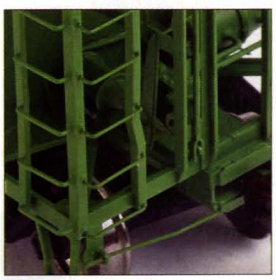

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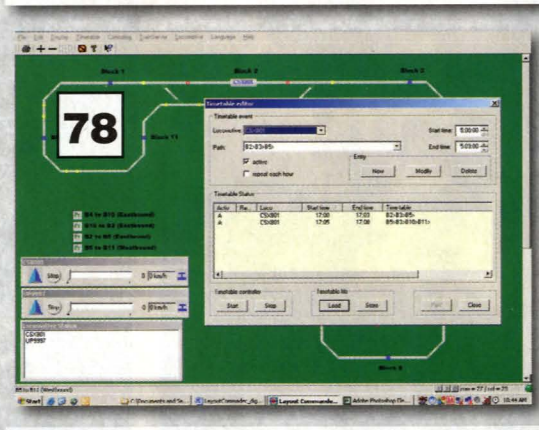

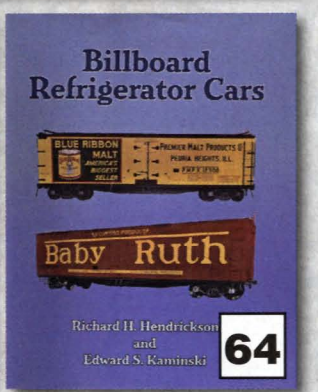

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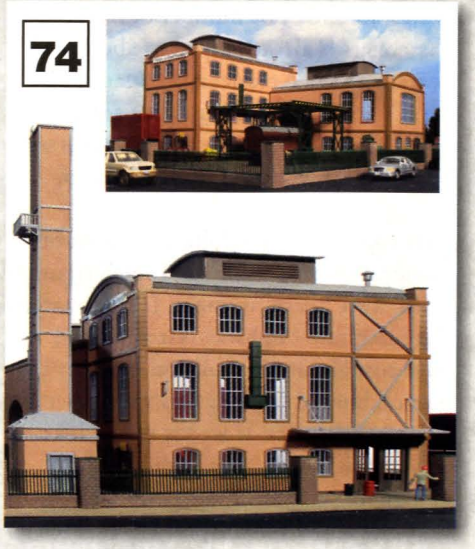

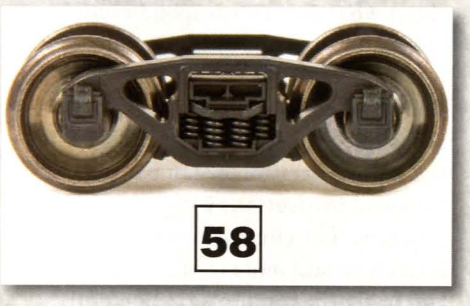

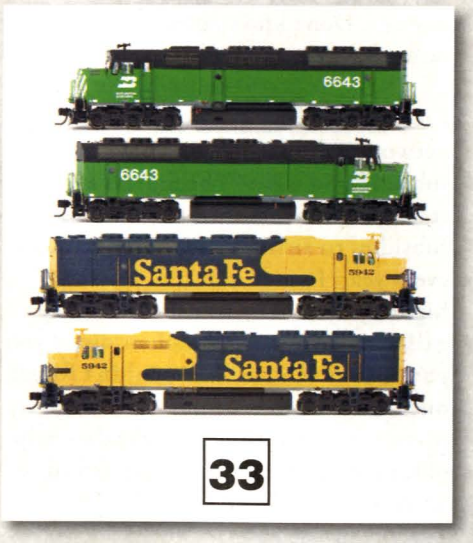

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About The Cover: *My favorite Dash 9-44C poses for a wedding photo with her groom, that tall rascal in the black tuxedo. He's displaying the "splash screen" that shows when you turn the Transmitter on. For a fresh release, this is a very mature product, as illustrated by the fact the software is in version 2.0.4. The happy couple talks to each other a lot when their power is on, and the result is smooth operation, though it's an unusual marriage in that the groom tells the bride what to do. — Photo by John Sipple*

Editorial It's high time for high-speed rail

I'm looking at the N-scale version of Con-Cor's Union Pacific M1000 and thinking about the upcoming N700 Nozomi Shinkansen train set from Kato. The M10000 was one of the first real efforts to offer high-speed rail service to the American traveler and the Nozomi is the state-of-the-art in providing the same for Japanese passengers. While there is a vast difference in the technology, there is a similarity you can see in the streamlined profiles of the two trains. I would have loved to ride the M10000 and I would love the chance to ride the Nozomi.

I've been interested in fast passenger trains for years, both as a model railroader and as one who has traveled long distances fairly frequently. My N-scale roster includes the Kato Eurostar, complete with 4-car add-on, and I follow development of the Japanese bullet trains, German ICE, and French TGV.

In 1991, I got excited when there appeared the prospect of high-speed rail service in Texas. The state gave a 50-year franchise to Texas TGV, a consortium that included Morrison-Knudsen, Alsthom, Bombardier, Credit Lyonnais, Merrill Lynch, and other companies. The consortium was to build a privately financed railroad serving the state's three major cities, Dallas, Houston, and San Antonio.

Texas is a big state but we have only a few major business centers. The problem is that it's 250 miles from Houston to Dallas, about 274 driving miles from Dallas to San Antonio and roughly 200 miles from San Antonio to Houston. Except for the Houston-San Antonio run, all the distances are greater than the 225-mile distance between New York City and Washington, D.C. There's enough traffic that Southwest Airlines was able to get a successful start in the early 1970s by serving just these three cities.

The big deal about Texas TGV was, as the name suggests, the use of the French train à grande vitesse, or TGV, along with a system of dedicated tracks with no grade crossings and barriers to prevent the occasional steer from becoming instant hamburger and to reduce noise. The train would be have been able to operate at the same speeds it achieves on its runs in France, about 140 to 150 miles per hour. All of a sudden, rail travel became a real alternative to driving or flying. In less than two hours, the TGV could reach any of the cities in the system from any other city in the system. Sounded like a winner to me.

Sadly, the Texas TGV never happened. Politics, property issues, and escalating costs did the project in.

Texas is not the only state with distance issues: It's 649 miles from Pensacola to Miami, Florida and 228 from Orlando to Miami. About 370 driving miles separate Los Angeles and San Francisco, California.

America needs fast trains. That's why I was glad when President Obama announced his high-speed rail program last April. It's not perfect and I am sure the money pledged so far will be just a drop in the bucket, but at least it's on the table and something is happening.

The Acela that serves the BoWash Corridor is a good start, but only a start. For much of its route, it doesn't even meet the Federal Railroad Administration's definitions of high-speed rail and they're lower than the international definition. The FRA defines high-speed rail in an "emerging" system as running between 90 to 110 miles per hour. The Acela averages about 86. The international threshold is 125 miles per hour. The TGV averages 140 miles per hour between Paris and Lyon and 162 miles per hour between Paris and Marseilles. The Nozomi bullet train averages 171 miles per hour between Osaka and Fukuoka. That's high-speed rail and that's where we need to head if we want regional passenger rail service to be competitive with the airlines. It means grade-separated track, no grade crossings and, probably, a lot of catenary.

It also means a lot of money. Randal O'Toole, a Senior Fellow at the Cato Institute says a national implementation of high-speed rail could cost a trillion dollars. An opponent of the Obama initiative, he believes high-speed rail is a poor investment that will capture only about one percent of American travel.

Wait a second: The number of Acela passengers is already equal to about one percent of the American population. By Mr. O'Toole's reasoning, if we add high-speed rail in other regions, the trains will be empty. Somehow, I don't think so.

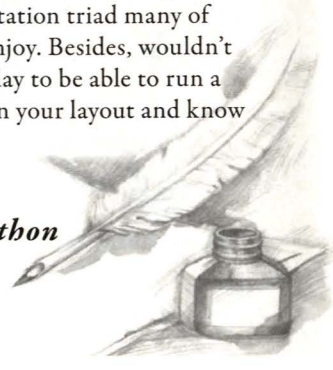
As for those trillion dollars: it's a lot of money. But even if Mr. O'Toole's figure is valid, it's a "scare" number. It's estimated the Interstate Highway system would have cost about $500 billion in today's money, but that money was spent over a period of decades. If we say it will take 25 years to build a true high-speed rail system in America, that trillion dollars becomes about $40 billion a year. That's about what Americans spend each year on cosmetics and trips to McDonald's.

The number doesn't seem to scare the government or financial industry. The last Administration began bailing out financial institutions with a $750 billion program. The current Administration is likely to add more to that number and bring the total to a trillion dollars or more. Don't know about you, but I'd rather have the railroad.

I realize building a high-speed rail network will involve government subsidies. So what? The federal and state governments spend billions on subsidies to airlines and motor vehicles every year. In fact, you subsidize the highways and mass transit with every gallon of gasoline, gasohol, or diesel you put in your vehicle. We shouldn't forget one thing: when it comes right down to it, we're the government. Subsidies help obtain the things we can only afford as a nation.

To me, this issue transcends the occupant of the Oval Office and whether they are capitalist, socialist, Tory or Whig. For too long, the U.S. has been missing one leg of the transportation triad many of our peer nations enjoy. Besides, wouldn't it be neat to someday to be able to run a high-speed train on your layout and know it's prototypical?

— By Bill Cawthon



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Fresh From The RPO Car

Terrible Product Service?

I am a disabled vet who has been in model railroading since 1970. I collect the special paint schemes such as the Athearn SD60M in BN Desert Storm livery. This brings me to the reason for this letter.

When I received my locomotive and opened the box I found the roof fans rolling around in the box. My dealer could not get a replacement so I decided to talk to Athearn. I have made five calls now and have been told the following:

1. We will have to wait till we get one back from Horizon.

2. We have not had parts in months.

3. Just take it back if you're not happy.

4. Glue them on; it's a toy.

5. There's nothing we can do.

Whatever happened to Athearn's reputation of customer service and quality? Some of us do not have the dexterity to do a repair that will not degrade the paint scheme. Besides this is new and factory defective. It seems to me that Athearn has regressed to the level of grab the money and run. This is a Genesis Model and is supposed to be their best quality.

If this is what we can expect from them then I would suggest that they drop their prices to reflect the new attitude when you talk to them: "Fix it yourself." I do realize that you get some that slip by QC but they should have the parts or spare bodies to repair or units to replace defective products. I decided to send this after I read that you were able to help a gentleman overseas.

Joseph Engel
West Chester, OH

I would bet Athearn is being completely honest with you. I have a feeling they are perhaps caught between a rock and a hard place, wanting to satisfy a customer but not being able to supply what the customer needs. Let me try to explain...

The realities of modern hobby manufacturing mean that, unlike the old blue-box kits that were produced in-house, most of Athearn's production is now subcontracted to a manufacturer, usually in China. Athearn ordered a certain number of SD60Ms in the Desert Storm livery and that's what the manufacturer supplied. The locomotives came completely assembled and packaged. They were then transferred to Horizon Hobby for distribution and shipment to retailers.

In order for Athearn to replace your locomotive, they really do have to get one back from Horizon. Considering the BN Desert Storm livery is fairly popular, there may have been no inventory left after the existing orders were filled meaning there were no more Desert Storm SD60Ms that Athearn could get to replace yours.

There really are no spare parts because the manufacturer makes no more than enough components to make the required number of locomotives to fill Athearn's order. He doesn't get paid for extras so he doesn't make them.

Athearn is not being flippant when they suggest returning the product to the retailer. The retailer is the one who has your money. His recourse is to get reimbursed for his cost by Horizon Hobby.

The only thing I could suggest is perhaps asking your hobby retailer or a friend if they could re-attach the fans for you. –Bill

Kato HO-scale models – Or Lack of

Why does Kato shun the HO-scale market? They clearly have fantastic HO-scale locomotives and cars, and looking on eBay can attest to their value and quality. SD40s produced in 1992 still go for almost $100.00. I don't understand, with the demand for the products that they have produced in the past, why don't they expand their line and add at least more roadnames to already existing locomotives. Their GP35, SD40, and SD45 quickly come to mind. It seems to me that they are really missing out on a golden opportunity. Just my thoughts, do you guys have any?

Matthew Fisher
Via E-mail

Not really sure how to respond, Matthew. Although it has been a while (July 2007, to be exact) since we have reviewed any Kato HO products, Kato hasn't been idle. They recently released a new mid-production EMD SD40-2 and a re-tooled GE C44-9W in HO scale. None of us at MRN are privy to their corporate planning but it could well be that Kato doesn't wish to compete with the huge variety of locomotives and rolling stock available from other manufacturers and focuses their resources on prototypes they feel they can sell in enough volume to make them profitable.

While I can certainly understand your desire for more Kato in HO, it's hard to blame them for their focus on N scale; that's been the backbone of their success in the U.S. and in Japan, where N is the most popular scale. There's only so much development money to go around and Kato is probably very wise to play to its strengths. –Bill

Mississippi Mallets

In Mr. Sipple's May 2008 article on the logging Mallets, we're told that one of the 2-6-6-2s operated in Mississippi. Could you please divulge on which railroad this occurred, or at least where we might find this information? Thank you.

Jack L. Batton, E.A.
Director, Meridian (Mississippi) Railroad Museum

Hi, Jack, It was actually a 2-4-4-2 rostered from 1910 to the early 1920s as Eastman, Gardiner & Company's No. 64. It ran on the Laurel & Tallahoma Western RR in Laurel, Mississippi. I have a favorite web site from which I get an impressive array of text and photos on the topic of Logging Mallets, including this one. Take yourself to: http://loggingmallets.railfan.net/ and enjoy! –John

O-scale TWO-rail

At last, a magazine giving publicity for the much forgotten O-scale two-rail modelers.

As a Brit who loves American railroading — and one that also prefers O scale (due to age?) — I am always left very frustrated at the very little credence given to two-rail modeling in O. I have to pinch myself sometimes and make sure I'm in the 21st century.

Three-rail? Goodness me, it seemed to me to be killing off any chance there is of expanding the two-rail market. Three hearty cheers for Atlas for sticking with it and producing such a fine available and affordable range. It's a shame that the two of the other three major manufacturers feel it necessary to market predominately three-rail goods and make two-rail models very hard to come by, and as for Lionel — well — for goodness sake isn't it about time they entered the modern age? Three-rail was sidelined over here in the 1950s!

So please, please, please much more of O-scale two-rail!

Sincerely, and thanks again for a great article — looking forward to more!

Don Gilham
Broome, Norfolk, UK

As there are a growing number of model railroaders who enjoy O scale, whether standard gauge or narrow gauge, we're always on the lookout for two-rail products. We'll report them as we find them! –Bill

Athearn FP-45 bloopers

Thanks for the Athearn FP-45 review. There were a few errors. The FPs were delivered in Dec 1967 and were in service during 1968: I saw and photographed them!

There is one error of omission and one of commission with the model. The truck side frames do not have air lines between the brake cylinders (the omission) and the front "chain" between the handrails was a solid handrail bar in the early years of use (all the photos I have collected of the 100 series show this).

One addition the FP-45 Santa Fe model needs is the Kadee No. 118 coupler. The top shelf is to be removed and the coupler was painted silver! This coupler was common to all Santa Fe passenger locomotives, even the FTs in passenger service.

Good article otherwise, I have three of the passenger versions and five of the freight versions, and they all run well and look fantastic.

Robert B. Rogers
Antioch, CA

Thanks, Robert! These are all modeling tips for those who really do like to do detailing. Both the "chain" handrail and the sideframes are complicated by being made of Delrin, Celcon, or some other engineering plastic that is both durable and almost impossible to paint or attach with glues. The coupler tip is handy and easy for just about anyone. –John

Dumb, Costly, and Confusing? Not so!

It is obvious Mr. Vehring (Fresh from the RPO Car, June 2009) has never participated in an operations session using DCC. I am in doubt that he has actually experienced, first-hand, Digital Command Control in action. Not just in demonstration. He is DC, or Dang Confused.

Let's take his first comment, "Dumb." First of all DCC is an intelligent system. It uses computer technology to run, keep track of, and decide how much voltage is needed for multiple engines running at one time, how many engines are in a consist (that's MUing), which direction it is supposed to go in that consist and which headlight to turn on. It controls sound in an engine, not at a stationary box which, by the way, costs more than equipping six DCC engines and the control system to run your whole railroad put together. They control and keep track of switch controls called macros which can provide route control from a push of a couple buttons from your throttle in the Command Station, i.e. "the brains" of the system, as it is known to DCC users, and a host of other functions.

So it's not dumb. It is a very intelligent system programmed by very intelligent people that invented it and keep improving it for all DCC users. "Dumb" in this instance, refers to a power pack that has a voltage control knob and a switch to physically direct the DC current through the motor for train control. So DC is dumber than DCC by far. I for one do not miss that "I" have control over my engines on the entire railroad. I do not miss saying "Who's got my train!" or waiting for a DC controlled layout dispatcher to "give" you the block to run in. I operate on one of the better DC-controlled layouts. There are more problems with train control because unlike DCC, DC can only run one train in a block at a time.

Cost: Well this is wrong. When PFM and other DC sound systems came out I believe they were also classified as "rich mans toys" as they were well in the $800 to $1,200 dollar range to equip one DC engine. And you could only control one DC sound-equipped engine at a time on a layout. That to me is not running a railroad.

As I stated previously, I can equip six DCC engines with sound decoders and buy the control system for around the $800 figure Mr. Vehring came up with or less, depending on how you go about buying your equipment. What is not mentioned in his assessment of the cost of the DCC system area all the electronic controls, rotary switches, block toggles, relays, not to mention 400 miles for wire needed to operate more than one train on an average sized layout for cab operation. Each cab needs its own wires to control a single train in each block. If you have eight cabs on a DC layout, that is a lot of money tied up in the copper industry. Where is the cost savings there? I figured up my costs for wire, toggles, rotary switches, relays, solder power transformers, cabs for an eight-cab system on my layout. It would cost me a few thousand dollars in materials alone to run eight trains. This versus $400 dollars for a good DCC system, without radio control (I use NCE), to operate up to 9999 engines, if I wanted, with two wires connected to the track. Sure the buss line we use costs money in copper wire, but a heck of a lot less wire is used and it costs 1/8th of what an eight-cab DC system would cost to build. Regular DCC decoders do not cost much. They can be had for as low as $15.00 per engine. People spend that much or more on super-detail parts. Again, where is the savings? For the other part of the DCC cost comparison I've used that money for radio control.

Confusing. Well I can agree there is a learning curve. But once you learn it, it becomes second nature. There is a learning curve in DC that requires you to learn how electrons flow through a wire to a switch to the track to hopefully run your train. I learned it. I abandoned it in favor of a much simpler wiring system that was much easier to diagram and troubleshoot. Two buss wires around the layout, connect it to two rails on the track, connected to a

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PUBLISHER
Michael W. Lindsay
mlindsay@modelrailroadnews.com

EDITOR
John Sipple
editor@modelrailroadnews.com

MANAGING EDITOR
Bill Cawthon
bcawthon@modelrailroadnews.com

NEWS EDITOR
Jennifer Lindsay
news@modelrailroadnews.com

ASSOCIATE EDITORS
David Otte
dotte@modelrailroadnews.com

Steven Goehring
sgoehring@modelrailroadnews.com

ASSISTANT EDITORS
Wendy Cawthon & Katie Lindsay

CONTRIBUTING WRITERS
Al Skinner, Alan Houtz, Art Lake, Dave Carr, David Jasper, Denis Dunning, Dick Bronson, Dick Foster, Dick Karnes, Mike Acker, Pete Birdsong MMR, Rich Cobb, Stephen M. Priest MMR, V.S. Roseman, Wayne Calder

COLUMNISTS
At The Grade Crossing *– Bill Cawthon*
gradecrossing@modelrailroadnews.com

S-Curves *– Dick Karnes*
scurves@modelrailroadnews.com

TAMR (Teen Association of Model Railroaders)
Jeffrey Andreski
tamr@modelrailroadnews.com

Thinking of DCC *– John Sipple*
dcc@modelrailroadnews.com

N-Depth *– Steven Goehring*
ndepth@modelrailroadnews.com

OPERATIONS MANAGER–ADVERTISER BILLING
Karen Lindsay
karen@modelrailroadnews.com

ART DIRECTION–PAGE LAYOUT
Paired Rail Railroad Publications, Ltd.
prrp@pairedrail.com

WEB DESIGNER–ASSISTANT PAGE LAYOUT ARTIST
Nancy Hutson
nancy@modelrailroadnews.com

LETTERS TO THE EDITOR
letters@modelrailroadnews.com

EVENTS & ACTIVITIES
events@modelrailroadnews.com

ADVERTISING–DEALER SALES
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nancy@modelrailroadnews.com

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DCC command station, a flat 4-6 wire control buss run around the layout and connected to "plug ins" for your throttles and all connected in much less time then a DC layout. I can have a DCC control system installed on an already existing DC layout by connecting two wires to a single cab position, turn all the cab controls to that cab and have multiple trains running on the layout in a little under an hour without flipping toggle switches to turn on and off blocks that are required to run a single train across a multiple cab equipped DC layout. And I can run them on the same stretch of track, at different speeds, in different directions if I wanted to. How confusing is that? Pretty simple, to me.

Programming CVs is finite engine, light, and sound control. All in one decoder. Try that with DC without adding separate parts that would cost more in total than a DCC decoder that has it built in. When was the last time you tried to change a three-engine road power set with another on a single piece of track on a DC layout? This simple maneuver takes place on a DCC layout without special wiring. You have to be wary of block boundaries, changing the cab control using the rotary switch, and toggle throwing.

With DC you have to make sure you don't cross a block boundary or your engines will start to die one by one as they cross it, as the block with the set of engines you want to change is now in a dead block. It can be done, but I have seen the other set of engines connected to the train run away from the engines trying to connect to it. I experience this on a DC layout every month. I prefer running my trains, not throwing toggles and having to get the timing right.

Mr. Vehring also states that not enough column space is devoted to DC equipment. DCC engines are DC. That hasn't changed. The way to control the DC engine has. So that argument will not hold water (bad thing when discussing electricity).

DCC is not dumb, costly, or confusing. It's just a question of: Do I want to run my trains or flip toggle switches and/or wait for someone to give you your operating block to run trains. I prefer controlling my own train on an operations layout to the DC "mother may I" form of operation on a DC controlled layout.

I invite Mr. Vehring to come to one of my operating sessions to "see" for himself the benefits of DCC and run his train without the additional headache of block control.

Bill Shanaman
Sugar City, CO

The split between DC and DCC is one of those issues like prototype vs. freelance and three-rail vs. two-rail. As Bill notes, the cost of DCC has come down dramatically (I remember what a Lenz system cost back in the early 1990s) and a degree in engineering is not required to enjoy its benefits. On the other hand, there's a lot to be said for the simplicity of DC operation. You can get complicated with DC wiring, but when it comes right down to the basics, it's tough to be simpler than a couple of wires and a power pack.

At the end of the day, there are no wrong answers, only what's right for you. Rather than take sides, we'll continue to test locomotives with both DC and DCC systems because our readers want to make their own

choices and we want to provide them with the best information we can.

Fair enough? –Bill

DCC Comments

You must have the patience of Job! For, some of the letters I read in the "RPO Car" column it must be quite "trying!"

I liken the DC/DCC debate to the movement in the photography sector (one of my other hobbies); many years ago, when the trend was moving from rangefinder 35mm to SLR 35mm, I believe there was much the same type of hoopla. In the last few years, the same can be said for the switch to digital... My local camera dealer tells me that it's been at least a couple of years since they've sold a "film" SLR!

DCC, in some form or another, is the future of model railroading. It only makes sense; run as many trains as you want, on the same track, at the same time — and no toggle switch marathon! 35 years ago I helped a friend build a 12x24 foot layout. It was more or less a myrid of track. We used two controllers and the block system with DPDT toggle switches. Sure, we could operate two trains at once, but it was exhausting to do so. If we'd had DCC back then, it would have been so much easier!

Keep up the great work, and the great magazine!

Blair Marston
Tunnelton, WV

Thanks, Blair. We like the questions from our readers, because that is the best way to know what you really think and feel. Meanwhile, Command Control of some sort is the future of model railroad power control technology, but will it be DCC? Command Control simply means you are controlling the locomotive instead of the track. Will this be the Lenz/ NMRA Digital Command Control (DCC) or will it be some other process? Will the signal be in the tracks or in the air? Can DCC evolve enough to remain contemporary or will something else come in and eclipse it? I can guarantee you that as new technology is explored, MRN *will cover the news! –John*

Editor's Note: *While preparing for press we received word of Hal Carsten's sudden passing. Hal was an incredible man and his presence will be missed tremendously. Our thoughts and prayers go out to his family and friends.*

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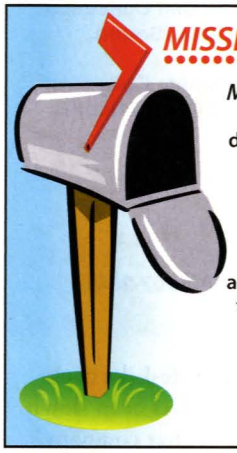

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REVIEW HO

The Return of the Proto 2000 Heritage USRA Mallet

Review and Photos by David Otte

Proto 2000 Heritage Steam Collection USRA 2-8-8-2 Mallet DCC/Sound, MSRP: $549.98
Proto 2000 Heritage Steam Collection USRA 2-8-8-2 Mallet DC/DCC Ready, MSRP: $439.98

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SINCE acquiring Life-Like back in 2005, Walthers has been slowly reissuing much of that company's model railroad-related product line of which the most notable category was the Proto 2000 series. When first introduced to the market some two decades ago, the Proto 2000 lineup offered the most accurate and detail-oriented HO-scale ready-to-run locomotives and rolling stock the hobby industry had ever seen, setting a precedent for all future model trains.

Most recently, Walthers re-released the Proto 2000 Heritage Steam Collection's USRA 2-8-8-2. *Model Railroad News* last reviewed this scale model under the Life-Like brand name in the June 2005 issue. The previous manufacturer had just teamed up with QS Industries to offer most of their Proto 2000 products factory-equipped with DCC and sound. Our reviewer, John Sipple, gave this model a "thumbs up" at the time and it doesn't appear things have changed a whole lot with the new release. Therefore, other than a brief history lesson to refresh your memory and a few comments of my own for those modelers new to this product offering, I'll let the model speak for itself through the accompanying photographs.

By-The-Numbers

2-8-8-2 USRA
Walthers Proto 2000
HO 1:87 • Type: Steam
Traction Tires? No

Pull Power (Ozs @ Full Slip)

Pull	÷	Loco Wt	=	Efficiency
4.8		20.0		24.0%

Volts	Amps
12	0.41

Analog DC

Start Volts = 5.0

Volts	Amps	Scale MPH
8.8	0.08	1.0
10.0	0.13	6.6
11.0	0.19	16.4
12.0	0.27	35.8

DCC

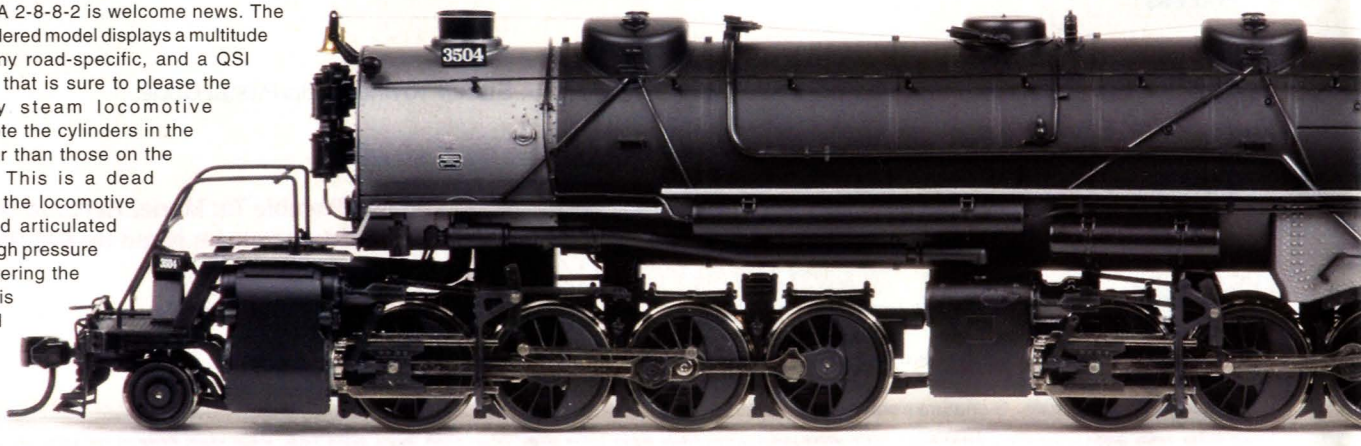
Speed	Step (of 128)	Scale MPH
Min	2	1.0
Mid	64	21.9
Top	128	45.2

The USRA's 2-8-8-2 Mallet

If you recall, when the United States entered the First World War in 1917, the government under the Woodrow Wilson Administration took over operation of the nation's railroads to expedite delivery of war materials. One of the biggest problems the new United States Railroad Administration (USRA) faced was the critical shortage of locomotives. Utilizing the talents of some of the best locomotive designers of the period, the USRA developed and produced twelve different locomotive types of modern design to fill this gap. In just less than three months, all design work was completed, and within one year, more than 1,000 of these standardized locomotives had been built.

The 2-8-8-2 Mallet Articulated was the last design constructed, and was one of the least widely accepted designs of the USRA, having been used by only three different railroads during the period of government control. The original owners were the Norfolk & Western (50 engines, which made up the Y-3 class), Virginian (20), and the Clinchfield (10) with 15 engines constructed by Baldwin and the balance built by the American Locomotive Company. Later copies amounted to some 70 more, 55 of which were spread over the same three roads, plus ten to the Rio Grande, four to the Northern Pacific, and two to the Interstate.

As a true Mallet design, the USRA 2-8-8-2 is actually two engines utilizing a single boiler and follows the principles



Walthers' reissue of the HO-scale Proto 2000 Heritage USRA 2-8-8-2 is welcome news. The accurately rendered model displays a multitude of details, many road-specific, and a QSI sound system that is sure to please the most finicky steam locomotive enthusiast. Note the cylinders in the front are larger than those on the rear engine. This is a dead giveaway that the locomotive is a compound articulated whereby the high pressure steam first entering the rear cylinders is exhausted and reused in the larger low pressure cylinders.

Walthers is offering their USRA mallet decorated for the N&W, Virginian, Clinchfield, NP, and as pictured here, the D&RGW. Alco's Richmond Works delivered ten USRA 2-8-8-2 copies to the Rio Grande in the early summer of 1923. Classed as L-107s and numbered 3500 – 3509, the Mallets could still be seen hauling freight up Soldier Summit double-headed with the road's other articulateds through the late 1940s. In particular, number 3504 would serve faithfully until being retired in June 1951. Note the curved top of the side cab window sashes, the straight numberboards on either side of the exhaust stack, and the doghouse on the tender: all unique details for a Rio Grande class 107 2-8-8-2. Furthermore, the use of the color Moffat Tunnel herald on the tender helps date this locomotive's appearance from roughly 1936, when the herald came into use, until about 1940 after which "Rio Grande" in speed lettering replaced the herald and full name spelled out on the tender sides.

laid down by the Swiss inventor Anatole Mallet back in 1874. [Ed. Note: Both the inventor's name and the locomotive type are properly pronounced "Mal-Lay."] True Mallets, or compound articulateds, used steam twice with the rear engine's cylinders receiving high pressure steam, which, when exhausted at a much lower pressure, was sent to the larger cylinders on the front engine. These locomotives were more fuel-efficient than their faster and more powerful simple articulated brothers, which sent high-pressure steam to all four of their identically sized cylinders. Eventually, the desire for faster operation and higher tractive effort would win out and the Mallet design would fall out of favor with most railroads by the mid 1930s. Many Mallets were even converted over to the simple arrangement. All of the 2-8-8-2s built under the USRA appear to have kept their Mallet status though, throughout their lives — a true testament of the solid USRA design.

As built, the USRA Mallets all shared the same general appearance and dimensions. At approximately 105 feet long for the engine and tender, they could produce a maximum tractive effort of more than 121,000 pounds working simple or 101,000 pounds in compound. They had 25-inch diameter x 32-inch high-pressure cylinders and 39-inch x 32-inch low-pressure cylinders with a boiler pressure of 240 pounds. These mammoths rode on 57-inch diameter drivers with 5-foot 3-inch centers (15-foot 9-inch rigid wheel base) at a total engine weight of more than 531,000 pounds.

Like many of the other USRA designs, the 2-8-8-2s would go on to serve through the Second World War and into the 1950s. Even the Santa Fe, Union Pacific, and Pennsylvania railroads ended up with a few ex N&W USRA Mallets during the war years. By the spring of 1959, the last 2-8-8-2, N&W number 2068 was retired, while another N&W unit, USRA copy number 2050, is today the sole surviving example of the design and is currently on display at the Illinois Railway Museum in Union, Illinois.

Walthers' Mighty Mallet

At 15 inches long over the couplers, the Walthers' HO-scale Mallet is a mammoth machine, whose dimensions match published drawings of the prototype to a tee. The boiler, cab, and tender are injection-molded shells with the locomotive having a two-piece internal metal casting that encases the motor, provides a rigid mounting point for the drive system, and adds weight for traction. In turn, the tender has a diecast metal frame with built-in speaker grilles, as the tender shell houses the QSI DCC and sound circuitry.

"Proto 2000" spelled out on a model locomotive's packaging means details, details, and more details and the 2-8-8-2 replica doesn't disappoint. The manufacturer has counted more than 150 separately applied parts used in the production of the USRA locomotive including many that are road-specific. Some of the items that caught my eye were the see-through perforations in the walkways along the boiler, the bell cord stretching back to the cab, wire hand rail on the engine and tender, the delicate sanding, air, water, and steam

lines, and the safety chains on the tender trucks. Furthermore, the steam enthusiast is treated to see-through spoked drivers and blackened metal running gear. I'm especially impressed with the wheelsets of the tender trucks, as they display raised lettering spelling out "ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS AAR 1936" on the face of each wheel with radial rib detail visible on the back side.

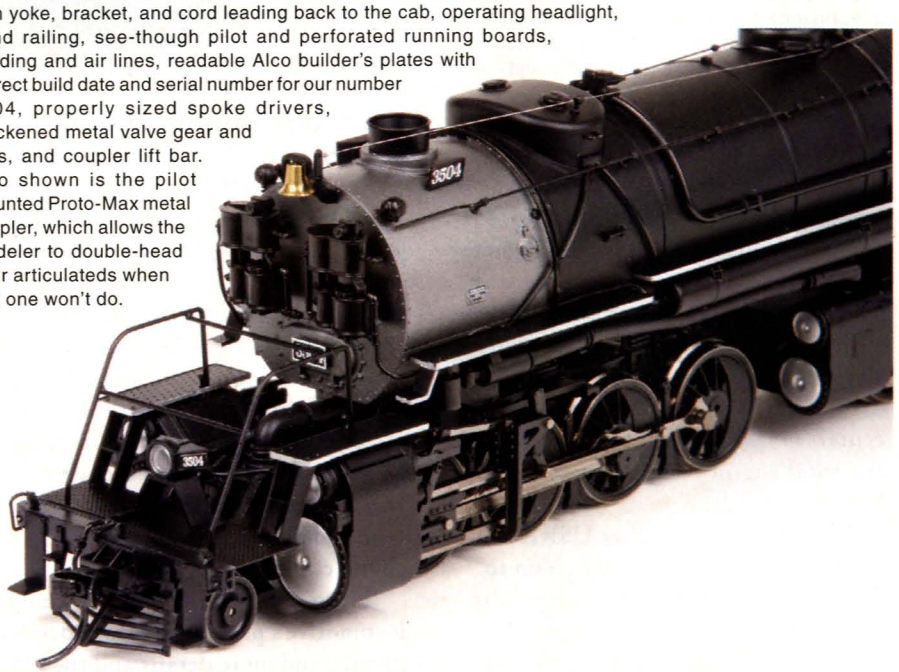
All of those great details are matched by a quality paint and lettering job. Walthers is offering their 2-8-8-2 decorated for the Clinchfield, N&W, NP, Virginian, and as represented by our review sample, the Rio Grande. Each DCC/sound version is available in two roadnumbers with an additional roadnumber available for the DC/DCC-Ready models. Walthers notes in their press release that these are all new roadnumbers different from those offered in the previous Life-Like release of this USRA mallet.

Our sample's satin black finish was accented with a graphite-colored firebox and smoke box, silver cylinder covers, and cab base and running board edges painted white. All the lettering was sharp and opaque, and the color D&RGW Moffat Tunnel herald on the tender sides added a bit of class to the whole ensemble.

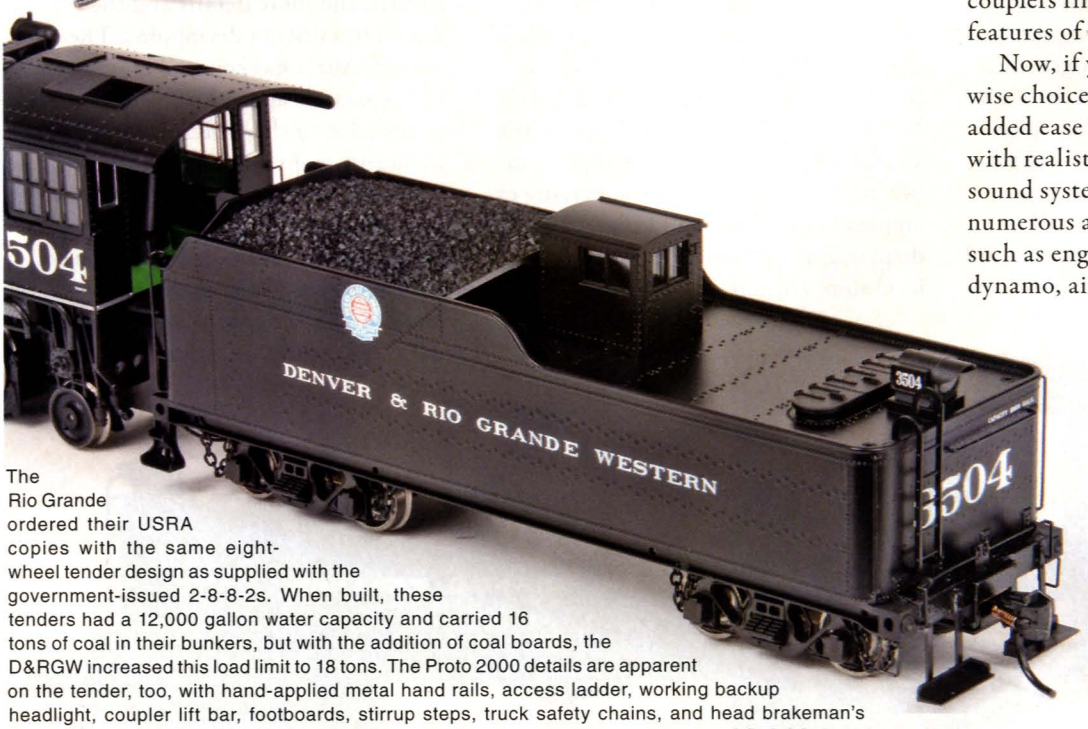
The drive system on this monster is similar in design to those typically used on diesel locomotive models. The dual flywheel-equipped can motor is centrally located in the boiler with drive shafts extending out either side to the gear towers of each engines' eight-wheel mechanism. The all-wheel drive setup does not use traction tires, so the tractive effort is entirely the result of this locomotive's one-pound, four-ounce weight. The drive wheels all act as electrical pickups as do all the tender truck wheels. Equipped with RP-25 flanges, the 2-8-8-2 is capable of running on rail sizes down to code 70.

Despite its length, the USRA Mallet will manage 18-inch radius curves, as both sets of drivers are allowed to pivot, unlike the prototype, which had a rigid rear engine. Directionally controlled headlight and tender back-up light and a pair of Walthers' own PROTO-Max metal magnetic operating knuckle couplers finish off the basic operating features of this steam locomotive.

Now, if you pop for the extra $110, a wise choice in my book, you'll get the added ease of a command control model with realistic audio from a QSI digital sound system. The operator is treated to numerous authentic locomotive sounds such as engine chuff, blower hiss, steam dynamo, air compressor, coupler crash, squealing brakes, and much more, as well as the usual bell and playable whistle. Now, in the real world, Mallets were operated as simple engines when starting out and after reaching a speed of 10 to 15 miles per hour would switch over to compound operation. Since, in the latter mode, the steam exhaust from the rear cylinders was passed on to the front cylinders



The Proto 2000 steam locomotive features details galore. In this view alone we have separately applied air pumps on the front of the smoke box, brass plated bell with yoke, bracket, and cord leading back to the cab, operating headlight, hand railing, see-though pilot and perforated running boards, sanding and air lines, readable Alco builder's plates with correct build date and serial number for our number 3504, properly sized spoke drivers, blackened metal valve gear and rods, and coupler lift bar. Also shown is the pilot mounted Proto-Max metal coupler, which allows the modeler to double-head their articulateds when just one won't do.



The Rio Grande ordered their USRA copies with the same eight-wheel tender design as supplied with the government-issued 2-8-8-2s. When built, these tenders had a 12,000 gallon water capacity and carried 16 tons of coal in their bunkers, but with the addition of coal boards, the D&RGW increased this load limit to 18 tons. The Proto 2000 details are apparent on the tender, too, with hand-applied metal hand rails, access ladder, working backup headlight, coupler lift bar, footboards, stirrup steps, truck safety chains, and head brakeman's doghouse. The tender also houses the brains of this operation in the form of the QSI DCC decoder and sound system circuitry. The digital sound system utilizes two speakers, which lie facedown in the floor.

Pictured here on 22-inch radius curved track, the Walthers Mallet will remarkably manage curves as tight as 18 inches and turnout sizes down to a number 4. Our sample ran flawlessly through both track types, forward and reverse, as well as on code 70 rail.

rather than out the stack as on a simple articulated, you should only hear the front engine's exhaust chuffs as if the Mallet locomotive was a very large two-cylinder type. As we have commented on in the past review, to our ears, QSI has captured the Mallet sound effect rather convincingly.

Continued test runs of our Rio Grande unit under analog DC and DCC power proved the model capable of a minimum speed of 1 scale miles per hour, better than advertised, and a maximum of 45 scale miles per hour under DCC — a good 15 miles per hour faster the prototype's top operating speed, but doable. The model is a smooth runner, although it is still lacking somewhat in tractive effort, which was the only real criticism its Life Like predecessor received.

Compared to the former's By-The-Numbers, the new release has only a 0.8-ounce greater drawbar pull. On the test layout, the USRA Mallet pulled 23 freight cars before wheel slippage occurred on level track with minimum 36-inch radius curves, which if you operate on a smaller layout, may be close to the maximum size consist your pike is capable of handling anyway. However, those modelers expecting the model to match the prototype's might, may be a bit disappointed.

Final Thoughts

I like to have my cake and eat it too, but some models just can't be all things to all modelers. Personally, the accuracy, level of detail, and excellent sound of the Walthers' 2-8-8-2 are positives that far outweigh its less then robust horsepower. I can live with the shorter consists.

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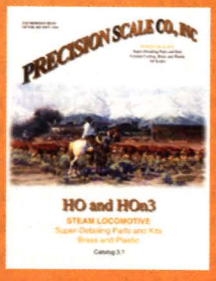

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Ringling Bros. and Barnum & Bailey advance car marks new series for Micro-Trains

Z & N — Micro-Trains has released a new boxcar in Z and N scale. Also available in Z-scale are five 40-foot standard boxcars, a Pennsylvania Railroad passenger car, a Southern Pacific passenger car, and a 30-foot composite frame gondola. Available in N-scale is a bay window caboose, a three-bay ACF Centerflow covered hopper, four 40-foot standard boxcars, a 50-foot rib side boxcar, and a 50-foot wagon top boxcar.

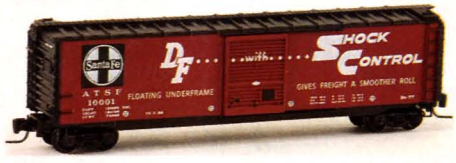
Z & N Scale

A new boxcar has been released for Ringling Bros. and Barnum & Bailey. The roadnumber is 1. Advertising or advance cars traveled in advance of the circus and were responsible for promoting the coming show. These colorful specialty cars will mark the beginning of a new line of N- and Z-scale themed and prototype products. Both cars will come with a collectible Ringling Bros. and Barnum & Bailey one-inch diameter button. The N-scale (#047 00 400) and Z-scale (#502 00 600) cars retail for $34.85 each.

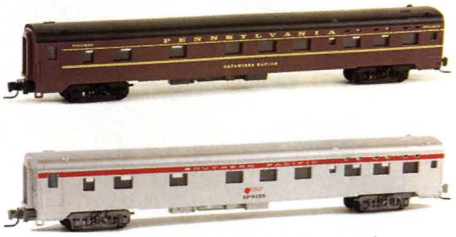
Z Scale

A 40-foot standard boxcar with plug door has been released for Indiana State. It is the thirteenth car of a 50-car series representing each of the 50 states in the union. It bears the Cardinal and Peony, Indiana's official state bird and flower. The flag of the state of Indiana is in the background. The roadnumber 1816 represents the year the 'Hoosier State' was admitted into the union. The boxcar (#502 00 513) retails for $22.95.

Two 40-foot standard boxcars with single sliding doors and no roofwalks are available for Chicago, Burlington & Quincy. They are painted green with white logos and lettering. Their roadnumbers are CB&Q 34236 and CB&Q 34238. They were built in June 1945, serviced in August 1969, and run on Bettendorf trucks. When this series of boxcars entered service for CB&Q, all were painted in the pre-merger Cascade Green paint scheme. The plan was to add the word NORTHERN below the BURLINGTON, but by the time the merger was consummated, the font had changed to a thinner style, so these cars never received the full merger name. The boxcars (#503 00 061 and #503 00 062) retail for $21.20 each.



A 50-foot standard boxcar with single sliding door is available for Atchison, Topeka & Santa Fe. The boxcar is painted red with black roof and ends, ladders and details. It bears the early black and white Circle-Cross herald with lettering in both white and black. It was built in October 1954, serviced in June 1958, and ran on Roller Bearing trucks. ATSF 10001 was a one-of-a-kind test bed for a new "home-built" class of cars. The success of this experiment led to the construction of 100 new Bx-76 class cars in 1958-1959. Along with the new cushioning came a brilliant Indian Red paint scheme with an oversized 61" version of the older style "Circle Cross" herald with the black box background, used only on this Bx-77 car. The remainder of cushion underframe equipped cars received the newer "Circle Cross" herald after 1959. The boxcar (#505 00 240) retails for $34.65.



A Pennsylvania Railroad and Southern Pacific passenger car is now available. Unfortunately, no car specific information was available at press time. The cars (#550 00 060 and #550 00 070) retail for $26.60 each.

N Scale

A bay window caboose is available for Chicago & North Western. It is painted yellow with a dark green roof, with a black, red, and white logo, and an American flag. The lettering is black. Its roadnumber is CNW 11119. This style caboose was built during the time period of 1965 to 1974 by International Car Co., serviced in November 1981, and runs on Swing-Motion Caboose Trucks. The bay window caboose afforded a better view of the side of the train and eliminated the falling hazard of the cupola. The caboose (#130 00 030) retails for $30.65.

A three-bay ACF Centerflow covered hopper has been released for Minnesota Soybean Processors. It has elongated hatches and is painted blue-gray with multi-colored logo, and black and red lettering. SOYX 98045 was built in January 2004 by Trinity Rail and runs on Barber Roller Bearing trucks. Minnesota Soybean Processors (MnSP) is a new start up company that began and expanded in 1998. They are a major player in the tri-state soybean market:

Minnesota, Iowa, and South Dakota. A large portion of the soybean meal is purchased locally for use as a feed ingredient. The hopper (#094 00 300) retails for $29.25.

A 40-foot standard boxcar with single door and no roofwalk is available for Western Pacific. It is painted red with black roof and ends. It bears the black and silver "Feather River Route" herald and silver lettering. The roadnumber is WP 21091. This car was built in October 1951 by Pullman-Standard and runs on Bettendorf trucks. All but the first 20 of these 600 boxcars were delivered with mineral red sides and black roof and ends. The series 20821–21400 is stenciled with this new Zephyr-inspired herald and lettering. The boxcar (#020 00 816) retails for $22.95.

A 50-foot rib side boxcar with plug door and no roofwalk has been released for Atchison, Topeka & Santa Fe. This car is painted red with aluminum roof and black ends. It bears the white Santa Fe Circle/Cross logo with Yellow "Super Shock Control" and white lettering. ATSF 151923 was built in February 1977 by FMC of Portland, OR, and runs on Barber Roller Bearing trucks. The floor of this car is nailable steel, shock controlled with lading anchors. The boxcar (#027 00 010) retails for $25.30.

A 40-foot standard boxcar with plug door and no roofwalk is available. It is the eleventh car of a 44-car series representing each of the presidents of the United States. It bears the portrait of our 28th president, Woodrow Wilson, and the roadnumber 1913-1921. Wilson led the United States during World War I. His belief in international cooperation through an association of nations led to the creation of the League of Nations and ultimately to the United Nations. For this he was awarded the Nobel Prize in 1919. The boxcar (#074 00 111) retails for $23.95.

Two 40-foot standard boxcars with sliding doors and no roofwalks have been released for Canadian National Road. They are painted brown with green and white maple leaf herald, yellow wheat sheaf, with white lettering, and are numbered CN 428717 and CN 428999. They were respectively built in June 1964 and January 1951, serviced in June 1985 and May 1987, and run on Bettendorf trucks. Identified for grain service, yellow wheat sheaf symbols were stenciled along with the "Repaired by..." message in both English and French. They were selected during January of 1980 for grain service refurbishing and renumbering, and they were fitted with paper or wooden grain door inserts. The boxcars (#024 00 341) with wood doors, and (#024 00 342) with paper doors, retail for $21.50.

A 50-foot wagon top boxcar with sliding doors and wood load is available for Northern Pacific. It is painted boxcar red with black roof and white logo and lettering. The roadnumber is NP 39630. It was built in November 1936 by Greenville Steel Car Co., Greenville, PA, rebuilt in January 1965, and runs on Coil Elliptic trucks. This car is an ex-Norfolk and Western, serviced and painted with black roof and boxcar red sides and ends for the Northern Pacific. It's lettered in white in the usual "leaser" scheme with reversed placement of the arched Northern Pacific letters being stenciled to the right of the doors. The boxcar (#079 00 020) retails for $23.85.

HOn3

A 30-foot composite frame gondola is available for White Pass & Yukon. It is painted boxcar red with white lettering and is numbered WP&Y 671. It runs on Arch Bar trucks. Considered an impossible task, the WP&Y literally blasted its way through coastal mountains in only 26 months; the 110 miles of WP&YR rails was completed with the driving of the golden spike on July 29, 1900, in Carcross, Yukon Territory, Canada. It connected the deep-water port of Skagway, Alaska to Whitehorse, Yukon, and beyond to northwest Canada and interior Alaska. Today, the WP&YR is Alaska's most popular shore excursion carrying over 431,000 passengers in 2006 during the May to September tourism season operating on the first 67.5 miles of the original 110-mile line. The gondola (#860 00 050) retails for $39.95.

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REVIEW N

Athearn Husky Stacks: Realism Stacks Up On Intermodal Cars

Review by Steven Goehring Review Photos by John Sipple

Gunderson Husky Stack well car, MSRP: $19.98

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N-SCALE intermodal operators, rejoice! Athearn has released a new Gunderson Husky Stack well car in six paint schemes. This run of the standalone double-stack cars includes SP, TTX (two different logo types), CSX Intermodal, BNSF, and BN. Each car retails for $19.98 and is sold individually in a plastic jewel case with a protective cardboard sleeve.

As I write this, I am riding west on Amtrak's *Pennsylvanian*, watching double-stack trains roll by in the other direction. Double-stack trains truly are the defining mark of modern freight railroading and Athearn has left a mark on the N-scale freight car market with their model of the modern Gunderson Husky Stack car. How is the Husky Stack any more modern than the next freight car? Read on and find out!

Origins of the Husky Stack

Double-stack container trains first hit the rails for regular service in 1981. The Southern Pacific Railroad had developed the idea to provide service for the Sea-Land maritime shipping company. SP's pioneering double-stack service let Sea-Land's containers take a shortcut from the west coast to the Gulf of Mexico bypassing the Panama Canal. From prototype car to production order, the SP spent a little over four years on the double-stack development project.

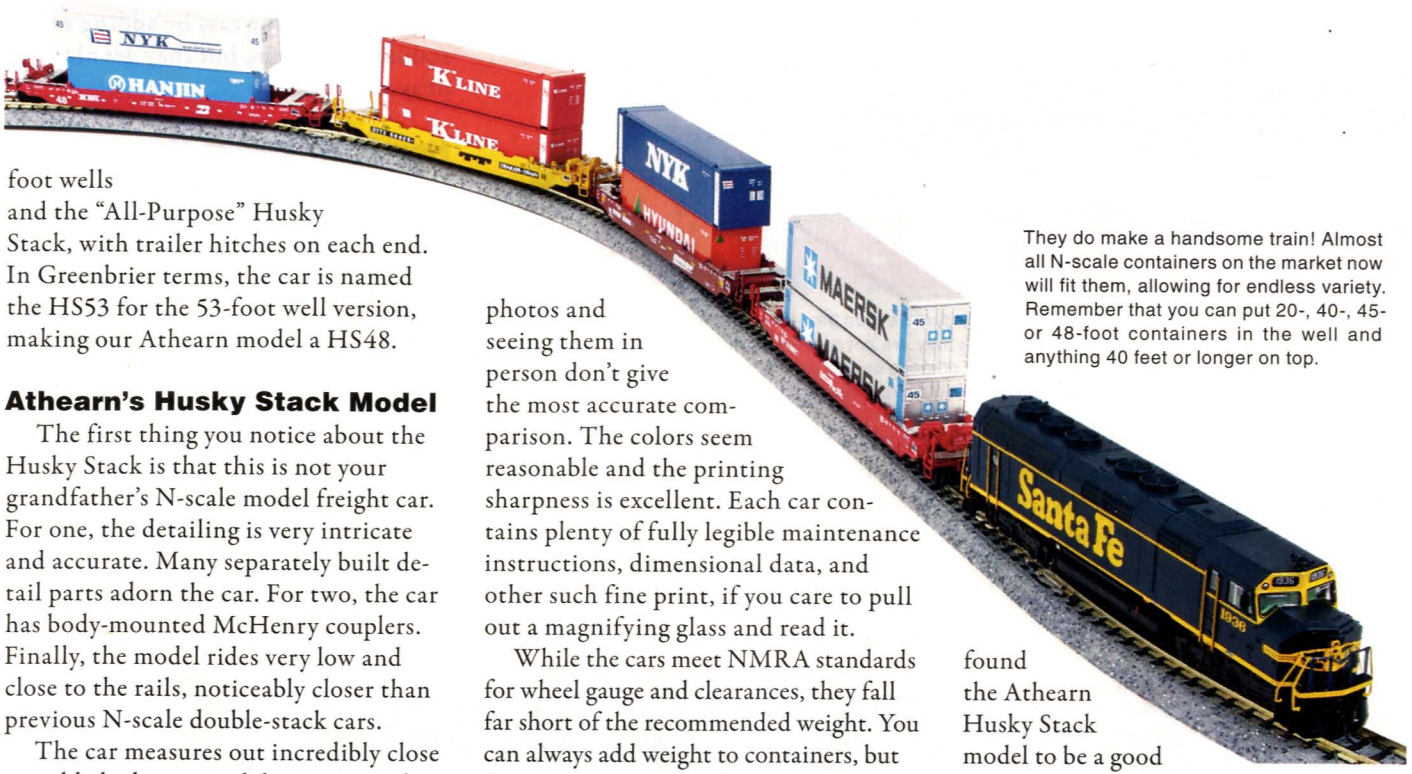
The SP's double-stack cars featured unwieldy bulkheads on each end to prevent the loose top container from blowing off of the car. A new group at Greenbrier Intermodal designed a similar bulkhead car, even as other companies were starting to leave the bulkheads off of their stack cars. The support for the upper container came from inter-box connectors (IBCs) which had been used for years in ocean-going container shipping. Greenbrier and their car builder, Gunderson, wanted to get in on that market, and did so with their Maxi-Stack cars. But there was another new market out there: developing a single, two-truck stack car. Almost all of the existing cars in service were articulated, with the exception of one SP prototype car.

David DeBoer, a co-founder of Greenbrier, had been seeking to fill this single-well stack car niche, despite the "intermodal experts" at Trailer Train Corp. insisting that the only single-well car that could ride smoothly was a European-style 2-axle car. (In fact, it was DeBoer who wrote the reference book I used for much of this background. His *Piggyback and Containers* is a highly recommended read, and it was my first review item for *MRN*.) DeBoer sought advice from his retired former boss at the SP. This pitted the Doubting Thomases at TTX up against Bill Thomford, who had developed the SP's double-stack prototypes. Thomford laughed off Trailer Train's existence, pointing out that his own single-well, two-truck stack car had a million miles of reliable service under its belt. DeBoer went back to Greenbrier and the company got to work designing the car that TTX said was doomed to failure.

In 1990, Gunderson turned out the Husky Stack. Test engineers proved Thomford right, and the cars tracked perfectly. Trailer Train ended up reversing their initial claims and ordering 150 Husky Stack cars built with 48-foot wells in 1991. The Burlington Northern also ordered 75 cars and other buyers lined up later. The original 1991 model cars are still going strong for many different owners, including Trailer Train.

Husky Stack development has continued today, with the introduction of 53-

The details really stack up on these cars. With body-mounted couplers, extremely accurate dimensions, a good number of separately applied parts, and very sharp printing, the Husky Stacks are very nicely done.



They do make a handsome train! Almost all N-scale containers on the market now will fit them, allowing for endless variety. Remember that you can put 20-, 40-, 45- or 48-foot containers in the well and anything 40 feet or longer on top.

foot wells and the "All-Purpose" Husky Stack, with trailer hitches on each end. In Greenbrier terms, the car is named the HS53 for the 53-foot well version, making our Athearn model a HS48.

Athearn's Husky Stack Model

The first thing you notice about the Husky Stack is that this is not your grandfather's N-scale model freight car. For one, the detailing is very intricate and accurate. Many separately built detail parts adorn the car. For two, the car has body-mounted McHenry couplers. Finally, the model rides very low and close to the rails, noticeably closer than previous N-scale double-stack cars.

The car measures out incredibly close to published measured drawings. In fact, I found every published measurement to be within inches of spot-on. There was no published value for overall coupled length, although it's safe to assume that the over-scale coupler shank common to all N-scale couplers would skew this measurement. Still, it was a joy to run down my scale converter and input value after value from the caliper... and smile as each one lined up. Kudos to Athearn and their predecessors for the attention to detail.

Speaking of detail, the car is nicely done. Both freestanding and molded-on brake equipment and air lines follow the published drawings and available photographs. The walkways look very nice, but they are not as accurate. The drawing published in DeBoer's *Piggyback and Containers* shows the car having full walkways on both sides of each end. This means the Athearn car would be lacking a step on each side (when looking at the car from the end, each side is lacking a step on the left). This may have been omitted to leave room for the brake rigging on the B end of the car. I won't miss this specific detail, although it bears printing here, considering the high praise I give these cars on scale accuracy.

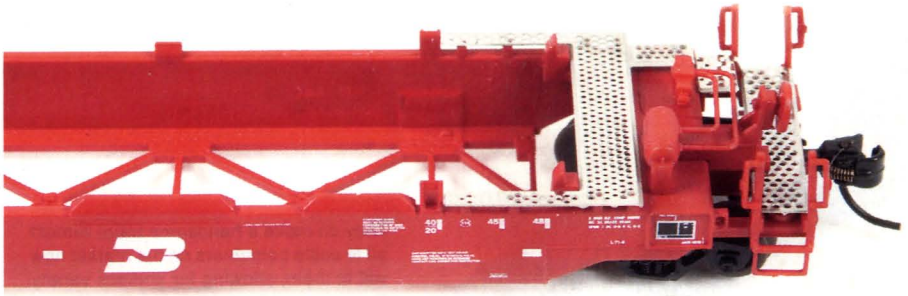
Paint and lettering are well done on the cars. The colors seem accurate, although at the rate that dirt and grime accumulates on these low-slung cars, photos and seeing them in person don't give the most accurate comparison. The colors seem reasonable and the printing sharpness is excellent. Each car contains plenty of fully legible maintenance instructions, dimensional data, and other such fine print, if you care to pull out a magnifying glass and read it.

While the cars meet NMRA standards for wheel gauge and clearances, they fall far short of the recommended weight. You can always add weight to containers, but for a 5-inch car to weigh only 0.26 ounces is crazy. A 50-foot boxcar by Athearn weighs nearly 5 times that, and measures more than an inch shorter to boot. The suggested weight for a car measuring about 5 inches over the frame ends should be 1.25 ounces. You won't get that weight level with an empty car, but by adding weight to containers, you can compensate. Containers weigh from .15 oz to .40 oz, but considering the low weight of the Athearn car, you should shoot for each container weighing a half-ounce. That said, the car still tracks fairly well despite its light weight. It would be better if the plastic body were replaced with metal for added weight, although that would probably force a compromise on the detailing and paint quality.

Mush!

Poor dogsledding puns aside, (as in Siberian Husky? No? OK,) I generally found the Athearn Husky Stack model to be a good runner, with some limitations. Its body-mounted couplers and long body require an 11-inch minimum turn radius, so this model is not for everyone. But in testing, I found that the cars will navigate anything down to even an 8.5-inch radius, albeit with tracking problems. I have just one spot on my Unitrak loop in my dorm that just didn't work with anything larger than an 8.5, so the Huskies were forced to work with it. On turns that tight or even just 9-3/4-inch curves, the wheels may rub on the end of a 48-foot container in the well, but this does not occur on the suggested 11-inch curves. Also, even the unloaded cars rock more and may derail in those sharp curves. So you can run them on minimum radius curves, but expect extra friction and a rougher-than-usual ride if you have to push the curve radius requirements.

Find an easy chair and a powerful magnifying glass, and you'll find plenty to read on the sides of the Athearn Husky Stack. The printing is nice and sharp, and accurate, too.



Check out the brake detail and steps. They're more durable than they look, although I don't advise testing that theory! The walkways are well done, although they are not entirely accurate. According to drawings and photos I've seen, there should be another set of steps on the side facing the camera here, too. This is missing from the other end, but most modelers could live without it and never know the difference.

When tested on straight track or on curves wide enough to meet the suggested radius, the Husky Stacks stay on the track reliably, remain coupled firmly, and generally run well. However, they do vibrate more than some other N-scale freight cars, because Athearn has omitted the car stabilizer system used by most N-scale freight car manufacturers. Since the car underframe has no contact pads with the top of the truck frame, the Husky Stacks are prone to vibration on anything but the flattest of track. Athearn could improve the cars by adding some stabilizing system, but they get along okay without one.

How it all Stacks Up

So, as the *Pennsylvanian* and I roll off into the distance, think about what makes modern railroading tick, and how you can capture the face of 21st Century freight on your railroad. With their excellent detailing, Athearn's Husky Stack is an excellent point to start from. It is a fine example of features that will likely become the standard for fine N-scale freight cars. It could do with drawing from older technologies to increase stability and add weight, but if your railroad's curves are wide enough, mush on over to your nearest hobby store and pick up a few Huskies.

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New rolling stock from Intermountain

N — Intermountain has released two 4750 cubic foot three-bay hoppers, three R-40-23 refrigerator cars, and four P-S 5277 cubic foot boxcars. The fully assembled models are now available.

Two 4750 cubic foot three-bay hoppers are now available. The first, BNSF (#65368), is decorated in the 2005 BNSF paint scheme. The body is brown with the logo on the right of the car side. It has six new roadnumbers: 466346, 466645, 466961, 470074, 470148, and 470307. Terminal Grain (#65393) is painted light gray with red lettering. The underside of the car is black with white lettering. The roadnumbers are 1003, 1011, 1026, 1038, 1049, and 1050. The cars are equipped with etched metal roofwalks and Micro-Trains trucks and couplers. They retail for $21.95.

Three R-40-23 refrigerator cars have been released with new roadnumbers. Pacific Fruit Express, double herald, (#65501) is painted orange with black lettering and brown ends. The UP herald is red, white, and blue, while the SP herald is black and white. The roadnumbers are: 5708, 5837, 6289, 7492, 7756, and 8000. Pacific Fruit Express with Overland herald, (#65509) is orange with black lettering.

The UP Overland herald is red, white, and blue. Its numbers are 46215 46379, 46430, 46487, 46522, and 46618. Pacific Fruit Express with double herald (#65520) is painted orange with black lettering and ends. Both the UP and SP heralds are black and white. The roadnumbers are 46826, 46974, 47217, 47585, 48144, and 48661. The models come fully assembled with Micro-Trains trucks and couplers, and retail for $19.95.

Four P-S 5277 cubic foot boxcars are now available. Railbox (#67509) is decorated in the later "Railbox" scheme with the small "next load, any road" logo. The car has a bright yellow body with black doors and a silver roof. The available roadnumbers are 37000, 37073, 37122, 37239, 37261, and 37305. BNSF (#67510) is painted with a brown body and white lettering. The roadnumbers are 723146, 723194, 723252, 723298, 723331, and 723362. Sault Ste. Marie Bridge Co. (#67517) is painted dark freight car red with yellow lettering. The roof is silver. The numbers are 41513, 41531, 41547, 41576, and 41584. Montana Rail Link (#67518) is yellow with black doors. It is decorated in the original "Railbox" scheme and includes new reporting marks for MRL. The roadnumbers are 21543, 21622, 21627, 21652, 21661, and 21664. They are equipped with etched metal endwalks and Micro-Trains trucks and couplers. The boxcars retail for $19.95.

Intermountain Railway Co., P.O. Box 839, Longmont, CO 80502-0839; 303-772-1901; Fax: 303-772-8534; E-mail: intermountain@intermountain-railway.com; www.intermountain-railway.com

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REVIEW **HO**

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Review and Photos by John Sipple

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HO 1:87 • Type: Diesel
Traction Tires? No

Pull Power (Ozs @ Full Slip)

Pull	÷	Loco Wt	=	Efficiency
1.9		10.2		18.6%
Volts		Amps		
12		0.32		

Analog DC

Start Volts = 5.9

Volts	Amps	Scale MPH
6	0.25	21
9	0.39	61
12	0.51	104

DCC

Speed	Step (of 128)	Scale MPH
Min	14	15
Mid	64	81
Top	126	122

IT WAS March 2004 when Dave Carr and I penned our first *MRN* review of the Athearn CF7, that one a round-roofed version. Using different tooling, Athearn has produced the CF7 in the boxy, flat-roofed cab version, and it's time we reviewed it. The CF7s got shooed off the Santa Fe in the late eighties and most went onto distinguished careers elsewhere. Small wonder they can be spotted wearing all sorts of paint schemes for a bewildering variety of railroads. Current production includes: Santa Fe, Chattooga & Chickamauga, C&G, Florida Central, Maryland & Delaware, Pioneer Valley, and MK&T.

Santa Fe's CF7

In March 1970, Santa Fe's Cleburne Shops turned out the first CF7. This was strictly a financial gamble right from the get-go. A new, 1,500 hp switcher with Blombergs trucks for yards or local switching would have a base cost of around $150,000. The railroad needed short-range switching and local service for industries and branchlines. They had an ocean of aging 200-series F3 and F7 locomotives that were about done. The old F-units developed cracks in the truss-frame locomotive bodies, and these were almost impossible to adequately repair. Worse, an F-unit was a bad choice for switching.

ATSF shopped the notion of converting this herd of F-units into small hood units, but EMD and GE weren't interested, so the folks at Cleburne Shops cobbled up their own solution. They would slice off the nose and back of the body and send them off to the scrapper. The trucks, diesel engine, generator, and every other single thing was removed from the frame. To replace the support of the body trusses, they created I-beam side-sills with a fishbelly midsection.

With a round roof on the left and a flat roof on the right, you begin to see the difference. Instead of using a section of the old F-unit for a cab, a higher box was constructed with a large roof. Santa Fe loved large loco roofs, installing an entire hardware store on each one! Also note the difference in the engineer's windshield from one to the other.

Then they started adding back the removed parts, after fully reconditioning all of them. It took about 45 days from start to finish, and once the program got started, they were sending out a completed, painted unit every four days or so. Over an eight-year period, they converted 233 locomotives.

ATSF intended to get these machines out for a cost of around $60,000 each, but once they were into the swing of it, the accountants pegged the number at more like $40,000 per. Changes, both major and minor, came to the production as they went along. About 174 units into the program, they decided they could save considerable money by simply fabricating their own cabs rather than trying to preserve the cab portion of the old F-unit. Sound insulation was improved, and the air conditioner was moved to the top of the roof rather than hanging down inside of it. Every CF7 had an air conditioner, whether you could see it or not. This was not only for the crew's comfort but to also improve reliability of the electric cabinet.

When Santa Fe put the lot of them up for sale, the market for them was intense. Amtrak traded for 25 of them, shortlines bought them in ones and twos, plus they ended up on the majors, including KCS, BN, and Conrail. Leasing companies snapped them up, and industries bought them. Several served the poultry feed businesses in California and came to be known as "Chicken Switchers." Crews liked them, owners found them to be reliable and economical, and railfans thought of them as being simultaneously ugly and adorable.

Athearn's Flat-Roof Cab CF7s

Despite having built 174 without flat-roofed cabs, Cleburne Shops put the more modern cab on the locomotive whenever it came in for a major shopping. By the time they were put up for sale, far more had the so-called "Topeka Cab" than still wore the older round-roofed cab. Actually, the Topeka headquarters had nothing do with the cab; it was the brainchild of Eldon Whitworth, the assistant general foreman of Cleburne Shops, so it could logically be called the "Whitworth Cab." Athearn calls it the "Angled Cab," and that's a good name for it. Since a large, flat roof was the goal in making their own cab, Cleburne forces just called it the "Flat-Roof Cab."

The flat roof was a veritable farm where the shop forces could plant a crop of equipment, starting with air conditioners and spreading out to antennas with ground planes, multi-chime horns, and light beacons. While they had their own set of standards, it sometimes seemed as though no two roofs were identically equipped. After sales to shortlines, those changes got magnified. Amtrak cleaned the roofs of everything in order to meet clearance requirements.

So we have five post-Santa Fe samples and one actual ATSF unit. The roads, in alphabetical order, start with the Chattanooga & Chickamauga Railway (CCKY). Running from Alton Park Junction, Tennessee to Lyerly, Georgia, it covers 48.9 miles of track. They have had CF7 101 on their roster. The C&C is owned by CAGY Industries, who also owns our next sample, the Columbus & Greenville Railway (CAGY). Running out of Columbus, Mississippi, it has a total mileage operated of 230 with 175 of that being the main line to Greenville.

Pioneer Valley RR's No. 2565 is a good example of a railroad that kept the original Santa Fe roadnumber, even with a very attractive new paint scheme. Notice that the roof accessory arrangement is different from the ATSF version. Sometimes it was Cleburne that rearranged the furniture, and some of it may be due to post-ATSF meddling. This arrangement is correct for 2565 as it worked on the PVRR.

Apparently the folks down in the Deep South decided to dispense with the air conditioner. The number 808 didn't originate on the Santa Fe, so that's something that's been changed. CAGY 808 has its "card table" still being used as a plane for the antenna.

Florida Central's No. 47 has kept its air-conditioning (something I'm sure the crews appreciate) and it also sports an extra set of horns on the rear of the locomotive. The separately attached ladder rungs are a very nice touch.

On the back is our original round roof cab version working with the newer flat roof cab, both sporting silver trucks and the blue-and-yellow Warbonnet paint. They make a nice pair, working together, especially with identical NCE decoders equalizing them.

CF7 808 is still at work for them.

Florida Central Railroad (FEC) operates between Miami and Jacksonville in Florida with a total of 442 miles and has 73 locomotives, including CF7 47. The Maryland & Delaware Railroad (MDDE) runs on five different routes, and at last word has nine locos, three of them being CF7s, including 2628, our lone round-roofed representative. The Pioneer Valley Railroad (PVRR) operates in southwestern Massachusetts on two branches that radiate from Westfield. Number 2565 works for them.

Not only have roof accessories been customized to each rail line, so have other details such as handgrabs. The windows are generally consistent with the prototypes; the flat-roofs more likely have a wide, slider window. The round-roofs most often had the forward slider and the non-opening window behind it. The first CF7s featured the F3/7 side windows with a wing section and hand-cranked, roll-up windows. Crews complained about them, so that practice was stopped; Athearn hasn't modeled that type so far. The extra set of horns on the rear of the long hood are appropriately there in the FEC unit. They also have spark arrestor screens on the exhausts that Athearn decided not to model.

The engineer's windshield is an issue of some interest. Originally, on the first units, it was a small window, but crews complained it was hard for the engineer to see a brakeman on the front step, so they added a smaller window below. Then came the tall window, made of bulletproof glass. Following the numbers from 2649, the first unit built, to 2417 (they added units downward), I can see no rhyme or reason beyond a capricious glass supply. Our round-roof sample has a small window while the flat-roofs have tall windows.

Most CF7s don't work alone, so two numbers for each railroad are common. The C&C locos have two numbers and two different paint schemes! Conspicuously absent are the MU hoses. A set of aftermarket MU hoses and cable box for each end would make an easy fix. All of them should have ditch lights by now.

Operation

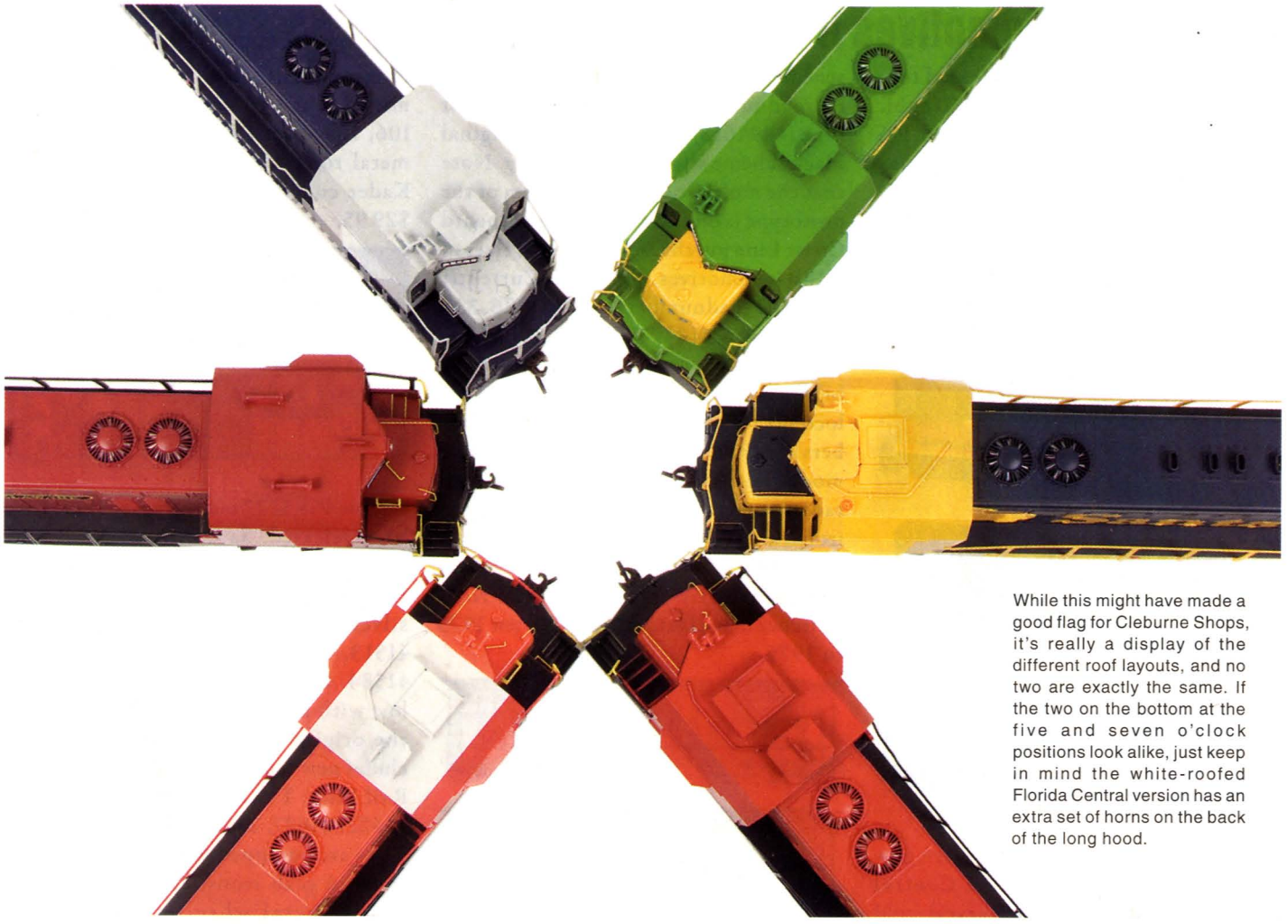
As I found five years ago when I first reviewed the ATSF round-roof version, this is basically the tried-and-true Blue Box drive with the Quik-Plug power board. The advantage of this system is that the lights are driven directly through wires that tether the shell to the chassis. Admittance is controlled by the couplers; remove them and the shell comes right off. I used a foam cradle, but I still had to exercise care with all the hardware on the roof.

All six of them ran smooth and quiet on DC power, but a top speed, well beyond anything realistic for a CF7, exceeded 100 scale miles per hour on all six units. It seems likely that an unwillingness to start much below six volts and then hopping to around 14 to 27 smph is due in part to a constant lighting circuit in the power board. The original round-roof from 2004 gave me 3.6 smph at 2.3 volts, a considerable difference. The 12-volt measurement was quite consistent between past and present versions.

Not surprisingly, the weight has remained the same with 10.4 ounces then and 10.2 ounces now. I weighted the older unit to 14 ounces, an addition of around three and a half ounces. That added about 7/10 of an ounce to the factory pull of 2.1, giving me more like 2.8. At this point, I've seen no reason to upweight the new CF7s.

DCC in the Cleburne Contraption

ATSF No. 2548 was the first one we reviewed in 2004, and we installed an NCE D13SRJ decoder into it, getting lovely results. Adding weight is complicated when you also add in a decoder board, and basically, you don't hang any above that location. This time, I installed more of this same decoder plus I put in a couple of D14SRP boards, a decoder that looks sort of like an electronic postage stamp with the NMRA 8-pins



While this might have made a good flag for Cleburne Shops, it's really a display of the different roof layouts, and no two are exactly the same. If the two on the bottom at the five and seven o'clock positions look alike, just keep in mind the white-roofed Florida Central version has an extra set of horns on the back of the long hood.

sticking out. This makes a good fit into the 8-pin socket that's been added to the Quik-Plug board since our last visit. Using the 8-pin still requires the dummy plug in the JST to be removed.

When I operated the models with the NCE decoders installed, they all performed within ten percent of each other, illustrating the dead solid consistency of both Athearn and NCE. Someone at ATSF once bragged that a pair of CF7s could pull a train 50 cars long, so I just had to try it! I had a fifty-car train of NMRA weighted, metal-wheels-and-Kadee-coupler-equipped, forty-foot cars. To no one's great surprise, the pair of them walked off with it!

These are silent decoder-equipped models, and I've shut off the DC compatibility mode on them. When I take the time to set all the appropriate CVs, I get well-matched models that MU very nicely. I use CVs 116 and 117 to get excellent starting operation and this lets me start with much less CV2 adjustment, typically around 5 to 10. The decoder will get me close to 120 smph, enough to frighten anyone but a NASCAR racer. I cut it to around CV5=100 or thereabouts, setting it "live." To do this, I set the loco at full throttle, enter Program On The Main mode, and set CV5 until I get about the speed I want, in this case between fifty and fifty-five scale miles per hour. Throw in around 15 momentum up and down to get good, smooth operation.

Of course, I used JMRI to first ID each loco and then put them into the system. I cheat and have up the first loco's set ups and write each relevant page to the new decoder which has a different address number. Then I go to the page for the loco I'm really changing, read the page from the loco, and save it. Between the use of JMRI and live setting with the throttle, I got through six locos very quickly.

One final note goes to the Santa Fe flat-roof, which has a beacon on top. These models use Grain Of Rice bulbs, not my favorite, and one of them runs up into the beacon. I'm sure there must be some method of pulling one lead of the beacon and soldering it to the appropriate function pad (which the D14 offers.) I'm sure a resistor is required, but if you get through all of that, you could program yourself a flashing beacon.

Legacy of Cleburne

The shops are gone, but the CF7s have proven their worth and then some. It's now 2009, 32 years since the last CF7 rolled off the Cleburne Shop line, and probably over half of them are still working regularly. They get all sorts of duties from Maintenance of Way service to Dinner Trains. Many of them are just beautifully painted and maintained. In fact, it's very difficult to model a modern shortline without having one or more CF7s. With so many to choose from in Athearn's stable, perhaps it's time to take one home.

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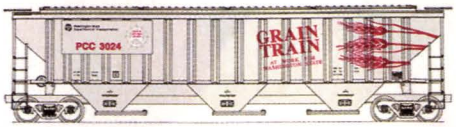
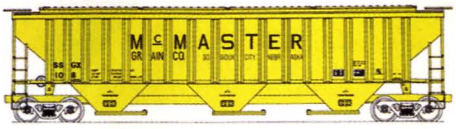
New U18B locomotives from Intermountain

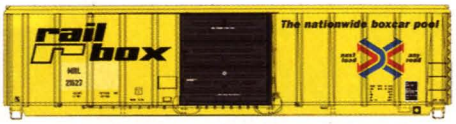
HO — Intermountain has released four new U18B locomotives, two 4750 cubic foot three bay hoppers, and two P-S 5277 cubic foot boxcars. The fully assembled models are now available.

Four new U18B locomotives are now available with sound. Maine Central (#49451S) is decorated in harvest gold and dark green colors, with the gold eagle image on the nose. The roadnumbers are 400, 405, 406, and 409. Providence & Worcester (#49455S) is decorated in the brown and orange scheme with white striping and lettering. Its roadnumber is 1801. Seaboard Coast Line (#49461S) is painted in the original black scheme with yellow striping. Note that the multiple headlight system of the prototype is on the model. The Seaboard Coast Line purchased the largest fleet of U18B locomotives, 105 in all. Currently available roadnumbers are 324, 326, 338, and 340. CSX (#49477S) is decorated in the gray, blue, and yellow colors of the bright future scheme. CSX obtained the locomotive through mergers. The numbers are 1932, 1934, 1938, and 1950. The models feature etched metal grilles and radiator sections, along with metal grab irons, and coupler lift bars. They retail for $219.95. The U18B locomotive was the eight-cylinder, branchline road switcher manufactured by GE from 1973 to 1975.





Two 4750 cubic foot three bay hoppers are now available. Grain Train (#45392) is painted light gray with red lettering. The Grain Train logo is red. It is available for roadnumbers 3003, 3005, 3008, 3012, 3017, and 3024. McMaster Grain Co. (#45394) is bright yellow and lettered in black, with SSGX reporting marks. The numbers are 101, 102, 105, 106, 108, and 109. They feature etched metal roofwalks, metal wheelsets, and Kadee couplers. The hoppers retail for $29.95.



Two P-S 5277 cubic foot boxcars have been released. Sault Ste. Marie Bridge Co. (#47517) is painted dark freight car red with yellow lettering. The roof is silver. It is available in roadnumbers 41513, 41531, 41547, 41569, 41576, and 41584. Railbox (#47518) is painted yellow with black doors. It is decorated in the original "Railbox" scheme and includes new reporting marks for Montana Rail Link. The roadnumbers are 21543, 21622, 21627, 21652, 21661, and 21664. They are equipped with underbody piping and grab irons, etched metal endwalks, metal wheelsets, and Kadee couplers. The boxcars retail for $31.95.

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80-2018-1 EMD DEMONSTRATOR SD70M-2 #75
80-2019-1 EMD DEMONSTRATOR SD70M-2 #76
80-2020-1 FLORIDA EAST COAST SD70M-2 #100

80-2021-1 F E C SD70M-2 #102
80-2022-1 F E C SD70M-2 #103
80-2023-1 UNION PACIFIC SD-70ACe
80-2024-1 UNION PACIFIC SD-70ACe
80-2025-1 UNION PACIFIC SD-70ACe
80-2026-1 CANADIAN NATIONAL SD70M-2
80-2027-1 CANADIAN NATIONAL SD70M-2
80-2028-1 CANADIAN NATIONAL SD70M-2
80-2029-1 FEC - RAILAMERICA SD70M-2
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REVIEW N

Athearn pairs up with Soundtraxx in N-scale sound-equipped cowls

Review and Photos by John Sipple

Sound/DC/DCC F45/FP45, MSRP: $229.98

Athearn Inc.
1550 Glenn Curtiss St.
Carson, CA 90746
310-763-7140 • Fax: 310-763-7449
www.athearn.com

Some of BN's fleet of F Cowls were inherited from Great Northern when BN was formed in 1971, but BN ordered some, too. The models are striking in their Cascade Green and black. The detailing is correct for this version, and the white safety stripes certainly catch the eye.

Santa Fe and Milwaukee were the only roads to purchase the FP version, and ATSF was the only one to buy both. The blue-and-yellow bonnet paint scheme first appeared on the FPs in the eighties. Not produced by Athearn but expected by us would be the Kodachrome version.

FP45 AND F45 "Cowl" diesel locomotives were covered in our January 2009 edition, but these were the decoderless first release. Our new samples have sound, and so it's time to pick up where we left off. While we have the BN F45 and the Santa Fe blue-and-yellow bonnet for samples, let's reach beyond them a bit. At some point, the original purchasers put them out to pasture because of the economics of fleet management. These were V20-engined locomotives and were considered to be gas guzzlers. The 710G-equipped locos had more horses with only sixteen cylinders, offering greater efficiency in a newer locomotive.

However, the Cowls could still work a train! They went off to the larger railroads and found themselves working with SD45s and other machines out of that same vintage. Some wore the lovely maroon and yellow of the Wisconsin Central, some went to the Montana Rail Link's heavy mountain service, some got leased back to their old railroads on a short term basis and a few went to scrap. Several worked on the Utah Railway while BN's F45 No. 6640 ended up as Susquehanna's 3636. ATSF No. 5998 wore Kodachrome for a while and then was returned to blue-and-yellow bonnet. Cowls were among the first to wear the red and silver Superfleet Warbonnet in 1989. Eventually, all were sold from the original roads and finished up on secondary roads. If any of the F-cowls are left they would be likely laid up or stored. Hopefully, one or more have been saved for museum display.

Athearn's Sound Cowls

We've been expecting the sound version of the Cowls since we first covered the silent versions, but who knew what we'd find under the hoods? As it turns out, Athearn has turned to Soundtraxx for its decoder technology, taking home the Tsunami sound package. Gone is the radio control for DC power, replaced by the Soundtraxx event-driven model. With about a three-volt throttle range in Analog DC, this is about what we've come to expect from decoders with sound, DC and DCC.

I would think that most operators who prefer pure DC operation would purchase the DCC-ready version we've already reviewed; there are some bucks to be saved that way. Still, the sound is quite engaging in traditional DC, in part because things like the bell, the horn, and the prime mover are all automated, letting you run the loco while the sound processes take care of themselves. If you're patient, you can listen to the mighty V-20 645 engine start up with all the turbine whine and then settle into a gas-gulping idle. Gently advance the throttle, and the bell starts to ring, and a bit more gets the loco rolling. It rather jumps to life, hopping right up to eight or more scale miles per hour. At around 15.5 volts, I was seeing speeds between sixty and seventy; at 16 volts, it was close to eighty.

So we'll admit the entire Athearn Cowl sound experience is aimed a bit more toward the DCC driver. With top speeds between 94 and 104, it was time to take a little off the top. The problem with that notion is Soundtraxx

decoders don't have CV5 or CV6, so it's never that simple. Instead, you have no choice but to dig into speed curves. Starting speeds are good at between 2 and 3 volts, though I prefer everything to start at around 1 scale mile per hour or less.

By going to speed curves and using Decoder Pro, you can simply pull down the top speed slider and the click the "Match Ends" button to effect a straight-line curve. If I had to do it without Decoder Pro, I might pull out all my hair, since you would have to set every dadburn one of the CV steps by hand. Soundtraxx offers curve presets but doesn't address top end speed along the way. As with most sound decoders, these program better On The Main; with Decoder Pro, it goes pretty quickly.

The sound was very pleasing to me. Soundtraxx usually has the best sound samples around. No, they aren't as deep and throaty as the better HO sound decoders, but then they don't match the good G decoders, which don't hold a candle to the real thing. For a locomotive about the size of a pack of Doublemint gum, I'd say the sound is pretty incredible.

A look inside shows why. Soundtraxx has done a very good job of using the space available and leaving free air under the shell, above the chassis, to act as a sound chamber (baffle) that lets a small speaker sound bigger than it is. Along the way, their installation is efficient and very tidy. For most users, there is no user-serviceable parts inside, and the process of removing and reinstalling the couplers is sufficiently unrewarding that you'll probably just want to run trains. Now that's pretty rewarding! As with the silent samples, the sound units handle 9.75-inch radius curves, code 55 track, #4 switches, and reasonably rough track.

On the outside

I was impressed by the overall modelwork of the first sample, and not less so by these new ones. The mold work is crisp, the detail is excellent, the model

By-The-Numbers

F45-Sound
Athearn
N 1:160 • Type: Diesel
Traction Tires? No

Pull Power (Ozs @ Full Slip)		
Pull ÷	Loco Wt =	Efficiency
0.6	5.5	10.9%

Analog DC		
Start Volts = 14.5		
Volts	Amps	Scale MPH
14.5	0.10	8.4
15.5	0.13	57.9
16.9	0.12	90.2

DCC		
Speed	Step (of 128)	Scale MPH
Min	1	2.2
Mid	64	78.2
Top	128	93.8

By-The-Numbers

FP45-Sound
Athearn
N 1:160 • Type: Diesel
Traction Tires? No

Pull Power (Ozs @ Full Slip)		
Pull ÷	Loco Wt =	Efficiency
0.9	6.1	14.8%

Analog DC		
Start Volts = 14.1		
Volts	Amps	Scale MPH
14.1	0.10	11.1
15.5	0.13	67.2
16.9	0.12	95.2

DCC		
Speed	Step (of 128)	Scale MPH
Min	1	3.0
Mid	64	86.9
Top	128	104.2

The rear views of them both shows the ATSF back door's porthole window, not found on the Fs. All but the five Milwaukee versions had dynamic brakes as befitted machines headed for work in the mountainous west.

Now we get to see the famous Soundtraxx Tsunami miniaturized to N-scale proportions. This is an uncommonly tight and tidy installation. Once you get adjusted to fooling with the couplers, removing the shell is rather easy.

is durable, and the lettering is razor-sharp. I will say that the masking between color bands is fuzzy in places, but when observing the three-foot rule, you probably won't notice it.

The lighting is directional and bright. All six axles are powered and all 12 wheels contribute to the pickup of track juice. As a result, they tend to be fairly immune to mildly dirty track. The couplers work well, being plastic magnetic knuckles. I found the sudden starts disappeared when you gave these girls a load to pull. Like Clydesdales, these locos are born for pulling. I found they would MU pretty well with the silent models, after I did some equalizing on them. One sound unit in a pair of locos seems to be enough noise. I tied the FP45 blue-and-yellow bonnet sound version with the F45 pinstripe together to make some handsome hauling for a hotshot ATSF freight.

Both sides of both locos reveal the difference in length and where it got added. The additional fuel tank length included a subsection on the FP for the boiler's water. This space was soon converted to fuel to add extended range when the FP got put into freight service. The HO-scale models are great for pulling and MU together well.

Wrapping it up

Athearn has partnered with Soundtraxx to create what I consider to be a winning combination, and all sound-equipped locomotives from them will feature this wonderful technology. There are just too many new options in roadnames, roadnumbers, and paint schemes to begin to list them here; you would be far better off to visit www.athearn.com. There you will find what's available, what's due, and what is no longer on the market.

Though the F-cowls are often considered a western locomotive, this batch of locos is not restricted to western roadnames. These popular machines resurfaced after their original roads cut them free, emerging in the paint of the Wisconsin & Southern, Wisconsin Central, and the Susquehanna, along with Montana Rail Link. Athearn has given us a fine assortment to choose from, Soundtraxx is supplying exquisite sound for you to enjoy, and we are the beneficiaries of this decision.

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New NW2 diesel switcher with six paint schemes

S — S Helper Service has released the NW2 diesel switcher with six paint schemes. The models feature golden white LED single barrel lens headlights; fitted 8 ohm speaker; full cab interior, two man crew, and cab lights; body details include Delrin side handrails, music wire drop hand grabs, and Bronze EMD builder plates; rugged ABS plastic body, 5-pole can motor, diecast metal gear boxes and frame; blackened AF compatible metal wheels and operating couplers; and for scale operation, replacement code 110 NMRA RP-25 metal wheel sets and a pair of #01295 KD style couplers.

S Helper's newest NW2 diesel switcher is currently available in six paint schemes and three different power configurations. Power options include AC/DC, DCC, and DCC/DC sound decoder.

The available paint schemes are AT&SF painted black with silver zebra stripes, (two numbers); PRR painted Tuscan, or Brunswick green, (one number of each color); CB&Q is painted Chinese red, or black and gray (one number of each color); and black unlettered. The ready-to-run models are DCC compatible and are available with three power options: AC/DC, without sound for $199.99; fitted DCC decoder Lenz Silver JST-MP available for $229.99 or fitted SoundTrax "Tsunami" DCC/DC sound decoder for $299.95; and a fitted LocoMatic AC/DC sound decoder for $299.95. All models include a NMRA DC shorting plug.

S Helper Service, 77 Cliffwood Ave Unit 7C, Cliffwood, NJ 07721; 732-441-0555; Fax: 732-441-0751; E-mail: don@showcaseline.com; www.showcaseline.com

Canadian National Railway cabooses to be released in the fall

O — Weaver Models will be releasing a CNR Brass Caboose. The brass body construction will feature 1/4-inch scale dimensions and be operational on 0-42 curves.

According to Weaver, the caboose will have clear window glass, constant overhead lighting, interior details, and will be equipped with diecast trucks and couplers. The limited edition model will be offered in two different paint schemes: Green Leaf Logo (#G2022) with "straight" Serves All Canada rectangle and White Leaf Logo (#G2023)with "slanted"

Serves All Canada rectangle. Each will be offered in two different roadnumbers. The caboose will retail for $269.00 each, and it will be available in 2-Rail as well as 3-Rail versions. The caboose will be available in the fall of 2009.

Weaver Models - Scalecoat Paint, P.O. Box 231, Northumberland, PA 17857-0231; 570-473-9434; Fax: 570-473-3293; E-mail: customerservice@weavermodels.com; www.weavermodels.com

New Pennsylvania boxcars from Westerfield

HO — Westerfield has released the Pennsylvania railroad truss rod class Xg and Xh boxcars. The Xg version was built in 1895-96. It used 30 ton capacity trucks and wood body bolsters. The Xh version was built in 1898-1900. It used 40-ton capacity trucks and steel body bolsters. The two classes also had different style brake wheels. At least 17,000 cars were installed between the two classes.

Built before the general renumbering in 1905, all of the subsidiary lines were shown in the reporting marks. Westerfield includes decals to cover all of them, some of which have never before been modeled. These are separated into two kits covering Pennsylvania Railroad and Pennsylvania Company. There were also numerous billboards. The kits include Anchor Line, Empire Line, and Union Line lettering. Another kit covers the 1905 and 1909 lettering styles. A fourth kit models the cars that received safety appliances in the late Teens through system unification in 1920 and to scrapping in the late Twenties. All told, at least thirty lettering and class variations are possible in the four kits.

The following kits are the available: Pennsylvania Railroad Line East original (#11701), Pennsylvania Company Lines West original (#11702), Pennsylvania post 1905 lettering original (#11711), and Pennsylvania safety appliances (#11751). The cars are craftsman kits with one-piece urethane bodies less trucks and couplers. Each kit is $33.00.

Westerfield, 53 River Lane, Crossville, TN 38555-7868; 931-484-7233; Fax: 931-456-4122; E-mail: westerfield@charter.net; www.westerfield.biz

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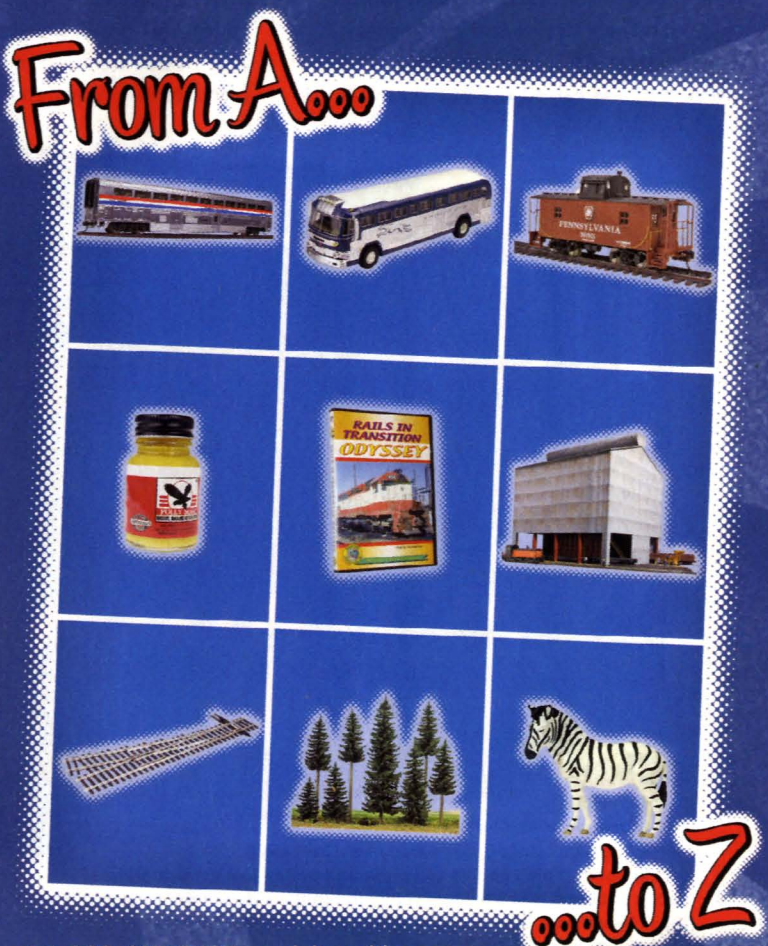

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REVIEW **HO**

Atlas Alco: High Hood is High Value!

Review by R. Dave Carr
Photos by John Sipple

Alco HH600/HH660, MSRP: $149.95

Atlas Model Railroad Co.
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www.atlasrr.com

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By-The-Numbers

HH660
Atlas Model RR Co.
HO 1:87 • Type: Diesel
Traction Tires? No

Pull Power (Ozs @ Full Slip)

Pull	÷	Loco Wt	=	Efficiency
1.1		7.8		14.1%
Volts		Amps		
13.6		0.25		

Analog DC

Start Volts = 5.8

Volts	Amps	Scale MPH
6.2	0.16	20
9.0	0.18	43
13.6	0.21	76

DCC

Stall Amps (if applicable)

Speed	Step (of 128)	Scale MPH
Min	1	1
Mid	63	40
Top	126	80

EVER since 1984, when the revolutionary Atlas HO-scale RS3 was introduced, Atlas has had a tradition of producing models of Alco locomotives that have amazed modelers with their detail and performance. Their latest Alco offering is no exception, and has raised the bar yet again in prototype fidelity. New from Atlas is the Silver Series HO-scale HH600/HH660 switcher, a model never before available in plastic. The first run from Atlas features one roadname for the HH600: Elgin, Joliet, and Eastern, and five roadnames for the HH660: New York, New Haven and Hartford, Erie, Chicago, Milwaukee, St. Paul and Pacific, Maine Central, and Southern Pacific. Undecorated units are also available, and as both the HH600 and HH660 are identical for the version Atlas has produced, only one undecorated version is necessary.

Early Diesel Days

With origins dating back to 1852 when the Danforth-Cook Locomotive Works, the American Locomotive Company, or ALCO as it became known, was a leading manufacturer of steam locomotives in the US, with locomotives in use world-wide. Ever a pioneer, ALCO was part of the consortium with General Electric and Ingersoll-Rand that produced the first commercially successful diesel-electric locomotive. Weighing in at 60 tons and rated at 300 horsepower, this locomotive began a revolution that would see the end of regular steam locomotive usage in North America within the next 40 years.

After the success of the first boxcab diesels built by the ALCO-IR-GE consortium, ALCO struck out on it's own, constructing a handful of experimental boxcab diesels, primarily for the New York Central. Success of these units was

While the High Hood's 660 horsepower engine was the same 539 Alco clanker, the carbody went full height on the hood. It also had its radiators and grilles just in front of the cab, a situation that would be relocated to the sides of the front in the follow-on S-1. The model's faithful reproduction also conveys the tallness of the machine.

hit and miss, as with any new technology, but results of these early diesel dabblings would pay off for ALCO in the long run. A significant change occurred during these units' development, the change from using prime movers supplied by Ingersoll-Rand to those produced by engine builder McIntosh and Seymour, since that company had been acquired by ALCO in 1929. From then on, engines would be developed and produced in-house by ALCO.

In 1931, ALCO constructed a demonstrator commonly referred to as the "0900 type," numbered 600. This engine featured a six-cylinder 531 series engine rated at 600 horsepower. A tall hood that was nearly cab high with sloped sides, and an exposed brake valve area under the cab reminiscent of a steam locomotive gave this unit a unique appearance. Sold to the New Haven where it lived out its service life, this locomotive was the first of a series of ALCO switchers that became known as the "HH" series, with the "HH" standing for "high hood." The first of this series was the HH600. These locomotives were mechanically identical as the 900 type, but differed in the use of ALCO Blunt switcher trucks, and a hood with straight sides. In 1934, famed stylist Otto Kuhler was asked to clean up the appearance of the HH series, and gave it a cab that featured an a-symmetrical roof profile, and rounded hood end that met the roofline with a feather edge, and would remain unchanged until 1937 when the hood end was rounded, forecasting the appearance of future ALCO switchers.

This fascinating machine shared some common features with its young brother, the S-1 of 1939. It used the same Blunt trucks and a similar cab. More than that, the HH-series really introduced the look of the end cab diesel switcher, including outside handrails.

One more great advantage of the diesel switcher was that it had the same operating characteristics forward as in reverse. Atlas has modeled the swing-up vent windows in the "up" position, just another detail to go along with the very nice cab interior, complete with an engineer figure.

The HH series was produced from 1931 until 1939 when it was replaced by the S-series switcher line and would encompass four different models: the HH600, HH660, HH900, and HH1000. The HH660 replaced the HH600 with the use of the new 539 series with 660 horsepower; however, externally, the 660 was identical in appearance to its predecessor. The HH900 differed from the HH600 and featured a turbo-charge 531 engine until it was replaced with the HH1000, a turbocharged 539 prime mover. The turbocharged engine differed in appearance mostly by the larger radiator section required by the higher horsepower ratings. Electrical equipment could either be from Westinghouse, or General Electric, depending on the customer's desire.

The HH series were different in a couple of ways from later locomotives. First, the hoods were as high as the cab since the engine and generator actually were mounted on top of the frame, whereas later designs from all builders would feature them mounted between the frame rails. Second, the radiator was at the cab end of the hood, and engine exhaust was at the opposite end of the hood, somewhat reminiscent of a steam locomotive. These odd appearing little engines featured no frills, as function was the order of the day. They were the first regular production diesel switchers, and as testimony of their rugged design, several examples of various HH models STILL work for Relco, a company that provides switching locomotives and services to various customers around the country. Also, several more of these units now reside in museums, where they rightly belong. ALCO built a heck of a switcher back in Grandpa's day!

The Model

Our sample model came decorated as Southern Pacific 1003, dressed in the attractive "Tiger Stripe" switcher scheme of the 1950s. It was one of three HH660's on the SP roster, having been purchased with sisters 1001 and 1002 in 1939. 1001 was ex-ALCO demonstrator 660. Delivered in the pre-war switcher scheme of black with white "Southern Pacific Lines" lettering and pinstripe,

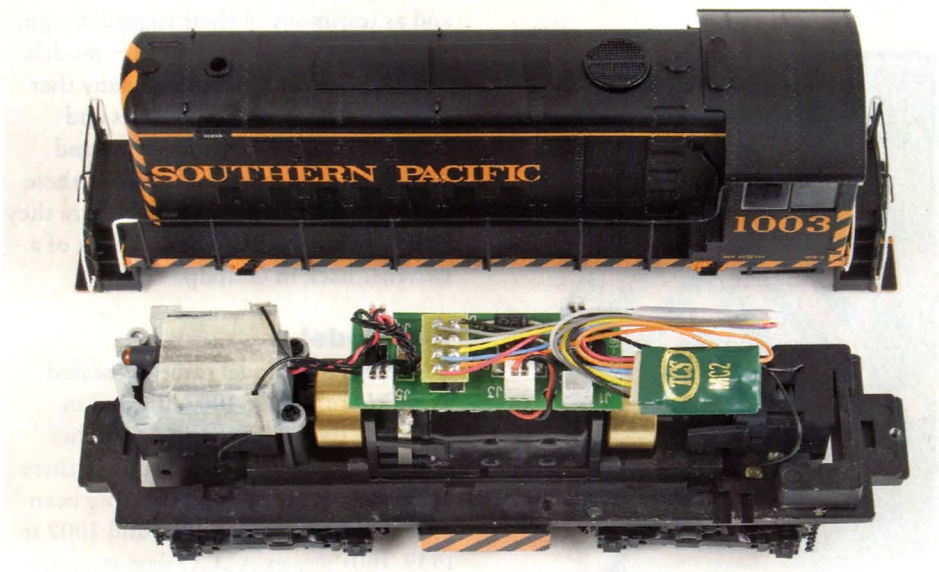
Beyond excellence in operation, Atlas also provides wonderful detail such as the three air reservoirs and their superb plumbing. The truck retainer chains add just that much more realism.

SP's little HH fleet would see several paint schemes, including one in the gray and red scheme introduced in 1958. The end came for the HH660's by 1963.

Atlas has chosen the HH600/HH660 as it appeared after 1937's minor restyling that saw the hood end refined with rounded corners. The model utilizes Atlas's time-proven can motor, driving all 4 axles, with current being picked up by all 8 wheels. Headlights are provided by LEDs at both ends of the locomotive, and while the yellowish appearance is better than the blue-white LEDs used in the past, real light bulbs would have a better appearance. The circuit board for the motor features an 8-pin DCC socket, and has miniature plugs for the truck power leads, and the headlight LEDs. This is a really nice feature, but has the drawback of crowding the area around the DCC socket. A small decoder will need to be used if making the switch, but those plugs are an improvement over the little black slip-on wire keepers used in the past.

Detailing is very well done, and dimensions appear to be dead-on. Handrails are cast of Delrin and are scale in appearance. The end rails and cab rails are user applied, and if you use the box for storage after they are installed, you will need to trim a little bit of the foam on the cab end to clear the handrails. Air reservoirs and plumbing are in place and very neatly done. Lettering and painting are nothing short of fantastic, very razor sharp, and executes the SP paint scheme wonderfully. One other thing I noticed, this body shell is rather easy to remove. The coupler pockets are removed via screws, then gently pry up on the pilots and the shell easily pops off.

The truck side frames are the lightweight version of the ALCO Blunt switcher truck. They come with or without the coil springs on top of the side frames depending on how the prototype was equipped. The large top-mounted brake cylinder is cast on, but this in no way detracts from its appearance. Included in the packaging are eight chains to be attached to eyelets on the truck side frames and into holes provided in the frame. These were to prevent the trucks on the prototype from separating from the locomotive in case of a derailment. To apply them to the model, patience and a good eye is required. I used a small pair of blunt nose tweezers to grab the chain link and slide it into the truck eyelet from the front side. Don't try to spread it open from the end, as you run the risk of breaking the eyelet off. To install the other end into the frame, use the same pair of tweezers to stick the leg of the eye into the frame hole. Atlas cautions not to use ACC to attach these eyes to the frame, but I did anyway and left the shell off for 24 hours to give the glue cure time so the fumes wouldn't run the risk of crazing the plastic. Also, make sure when the glue dries that if the eye legs stick up too far from the top of the frame, you use a jewelers file to take them down to frame height. If you don't, they will prevent the shell from sitting flush on the frame upon reinstallation. Now, you could leave the chains off, but they are such a noticeable detail, they are worth the time and effort to apply them.



Inside the hood of the HH660, we have removed the dummy plug and installed a TCS MC2 mobile decoder. The combination of loco and decoder results in snail-slow starting operation, turning this model into a top-notch switcher for industries and yard service.

Operations

The local management of SP's Oakland Yards didn't want to like the diesels that arrived to displace the 0-6-0 switchers that seemed just fine for them. Over time, the new High Hoods won over the hoggers, the crews, and the management. This Atlas High Hood won't take you so long to appreciate. It's a smooth runner, and the basic motor

and drive system is true Atlas quality.

Since most power packs for HO produce 13.6, not 12 volts, we decided to use 13.6 volts as our top voltage figure. While we could get the loco running under six volts, the constant lighting circuit caused the headlight to flash and the motor to lurch in sync. This is DC power from a pure DC power supply, and the problem cleared up when we got it up to around 6.2 volts. The light stayed on constantly and the loco moved smoothly — at 20 scale miles per hour. Top speed at 13.6 volts was over eighty scale miles per hour. The loco tracked flawlessly, however, and responded well to the throttle.

DCC offers some solutions, but first we had to install a decoder that would fit inside the shell, not an easy task. We tried several full-sized HO decoders without success, so I pulled a very small decoder from the box and put it to work. Train Control Systems makes the MC2P, a fairly tiny, shrink-wrapped item with a seven-pin socket and a medium harness. While the medium harness is far longer than this application needs, we were able to tape the wires into a neat bundle that fit under the shell. TCS sells shorter harnesses, and it's my guess their one-inch version would be about right.

The MC2 will handle 1.0 amp continuous draw and 2.0 amps peak, an astounding amount of amperage for such a small decoder. This is a true Back EMF decoder, and so I expected a lot from it. And I got it. We got step one speeds of less than a scale mile per hour, literally crawling from tie to tie. Top speed was around 80, far too fast for a loco with low speed trucks. Forty or fifty would be a better top speed, and you can adjust CV5 to your preference. Once there, you have a superb little switcher that runs with quiet smoothness and excellent low speed performance.

Summary

This is truly the golden age of model railroading, as evidenced by Atlas's jewel of a switcher. Well detailed and an excellent performer, this little pre-war unit has a multitude of eras and uses that are very appropriate, from the 1930s until now, and from yard switcher to grain-elevator shunter, the HH600/HH660 fits right in. You owe it to yourself to add one of these to your fleet!

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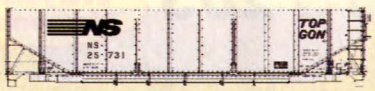

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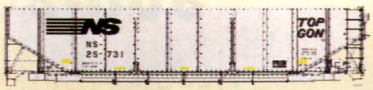

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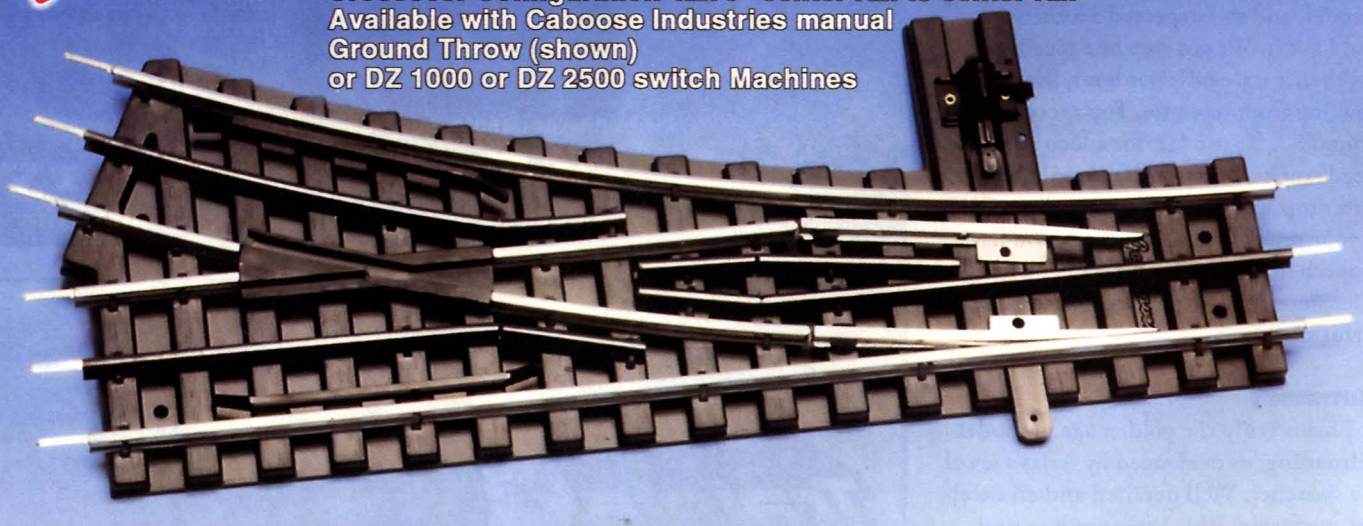

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REVIEW N

Intermountain's FP7 reports for duty in N scale

Review by Steven Goehring
Photos by John Sipple

EMD FP7 Pennsylvania RR (#69957), N scale, MSRP: $119.95
EMD F7B, Pennsylvania RR (#69757), N scale, MSRP: $89.95

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INTERMOUNTAIN Railway Company has released models of the GM Electro-Motive Division FP7 diesel locomotive, as well as new paint schemes of F7Bs to match the FP7s. The FP7s have been released in many roadnames, but the release closest to press time includes Penn Central, SOO Line, Alaska RR Bicentennial, Frisco, and C&O, all with matching F7B units except the Alaska unit. A release featuring Southern Railway, Southern Pacific, Northern Pacific, Milwaukee and Louisville & Nashville will follow, with F7Bs available for all but L&N. Our review sample is a Pennsylvania RR set in Tuscan Red wearing 5 pinstripes.

FP7s on the [Non] Standard Railroad of the World

Fans of the Pennsylvania Railroad will readily share how the PRR had plenty of exceptions to its slogan of "Standard Railroad of the World." Decisions that might have been practical at one point would somehow change, and the result would be decidedly non-standard equipment running around. Red switchers, unique prototype locomotives, or the six oddball Tuscan Red five-stripe-painted FP7 units were just a few of the anomalies found on the Pennsy.

The Pennsy's first order for EMD's FP7 comprised 14 sets of two cab units and one cabless booster (collectively called an A-B-A set,) with one extra "A" unit. After the first two A-B-A sets were delivered in red with five pinstripes, all subsequent Pennsylvania FP7s and matching F7Bs were delivered in Dark Green Locomotive Enamel with only one stripe. An extra five FP7A units were later added to the order, bringing the Pennsylvania Railroad's FP7A fleet to 40 units, with 14 standard F7B units ordered specifically for use with FP7s. But only the first six units received the classy red passenger scheme, and they were repainted to match their green, single-pinstripe sisters at various times in the 1960s.

These locomotives remained in passenger service for the majority of their service lives. They would not likely be found on a freight train while still in their ornate 5-stripe scheme, although as times got harder in the '60s, the PRR's FP7s ended up in freight duty, sometimes alongside New York Central units following the PRR-NYC merger.

Intermountain's Take on the FP7

As with their F3 and F7 models, Intermountain's FP7 is a winning model of another of EMD's classic streamlined diesels. The FP7 features the smooth drive unit and fine details that modelers also saw on the F3 and F7 models, and the FP7 has built on that strong start. Its measurements all come in within inches of exact scale. The measurement that was farthest off was the spacing between coupled units, coming out at five feet as opposed to the conventional three-foot space between EMD streamline diesels. Considering how it is the FP7's Micro-Trains couplers that skew that distance, I'm willing to compromise the spacing between engines in return for the reliability of the MT coupler. Coupler

If the Electro-Motive sales representative came by with this advertisement photo, what would you think of his passenger locomotive design? It looks sharp in its pinstripes, that's for sure. If only they also extended the stripes over the louvers on the FP7.

By-The-Numbers

EMD FP7
Intermountain
N 1:160 • Type: Diesel
Traction Tires? No

Pull Power (Ozs @ Full Slip)

Pull	÷	Loco Wt	=	Efficiency
0.67		3.51		19.1%

Volts	Amps
10	0.14

Analog DC

Start Volts = 1.5

Volts	Amps	Scale MPH
2	0.04	0.09
6	0.10	40.7
10	0.11	94.0

DCC

Stall Amps 0.30

Speed	Step (of 128)	Scale MPH
Min	5	0.9
Mid	63	88.1
Top	126	110.3

By-The-Numbers

EMD F7B
Intermountain
N 1:160 • Type: Diesel
Traction Tires? No

Pull Power (Ozs @ Full Slip)

Pull	÷	Loco Wt	=	Efficiency
0.61		3.59		17.0%

Volts	Amps
10	0.12

Analog DC

Start Volts = 1.5

Volts	Amps	Scale MPH
2	0.04	0.09
6	0.10	47.4
10	0.11	100.3

DCC

Stall Amps 0.30

Speed	Step (of 128)	Scale MPH
Min	5	1.2
Mid	63	93.7
Top	126	129.8

The FP7s run wonderfully with a conventional DC power pack, and they accept DCC, too. They even have a space for a speaker if you care to add sound!

height, wheel gauge, and clearances all matched NMRA standards.

The detailing is also well done. The plastic body is crisply molded, with details like the fuel fills and steps showing off Intermountain's molding skill. The separately applied parts are also very well done, and they're more numerous than on most plastic-body N-scale diesels on the market. Nose grab irons, windshield wipers, and all side handrails are separate parts, giving this model an extra-good appearance. Another unusual feature is the simulated cab interior, molded accurately in the pale green typical of the paint used in the cabs of EMD diesels. For those modelers in larger scales who claim you can't even see these fine details, let me say this: You'll know the difference right away when you try close-up layout photography. I have, and I can say that Intermountain's FP7 truly shines in this category.

The Pennsylvania Railroad's FP7s were delivered with several railroad-specific details that are left off of the Intermountain models (probably just to preserve commonality with other roads' FP7s and thus keep the model's price down). The most obvious detail missing is the distinctive Trainphone antennas on the roof. Model companies have included pre-installed antennae before, but it's an expensive option to add from the factory. Being a cheapskate, I'm glad they left it off, and I'll gladly build and install antennae myself. Other details the Intermountain FP7s lack compared to the PRR prototypes are the optional crosswise-mounted extra water tank underneath the carbody, just behind the front truck, and the nose-mounted lift rings. But in the absence of these details specific to the PRR, the Intermountain model is a dead ringer for an EMD FP7. Also, the PRR's B-units lacked all of these extra features, making IM's F7B a spotlessly detailed unit right out of the box!

The paintwork of the F-units is also generally very good, with one flaw on the FP7. The 5 gold pinstripes stop very conspicuously on the side louvers, while prototype photographs prove that the Pennsy painted right over them. This is very hard for the modeler to correct; even if the paint ran together a bit, it would be much better for Intermountain to apply the stripes correctly from the factory. That flaw aside, though, the rest of the paintwork is very close to the prototype. Their color shades for Tuscan Red and the gold lettering are very close, and all the paint is well applied, very crisp, and opaque. Even the wire handrails are well painted. The pinstripe paint does chip slightly on the corners if not handled carefully, so treat these delicate and detailed models with the care they require.

Operation Under DC and DCC

The FP7 has more than good looks: it can run extremely smooth, too. I was immediately struck by the incredibly low speeds it could easily sustain. You can see that I got it to travel under a tenth of a scale mile per hour, and that required little to no coaxing; just apply 1.5 volts of DC power, and it'll crawl off smooth-

ly. While its top-end speed is over the typical prototype capabilities, it's not hard to imagine an FP7 being geared to reach 94 MPH. The locomotive's headlight is bright and clear through the majority of the throttle range, and the loco produces little gear noise. If all N-scale locomotives ran this well, I'd be a happy camper indeed.

The drive mechanism is a metal split-frame chassis with a light/motor control circuit board screwed onto the top. Headlights are LEDs and all wheels are blackened metal, with no rubber traction tires. The mechanism is fairly heavy and pulls well. One interesting, possibly even unique, feature is the circular cutout in the chassis, just under the light board. Clearly, this is meant to accommodate an aftermarket sound decoder, which I'd be enthusiastic to try.

The other reason I'd like to try a sound decoder in the FP7 is that the only available DCC decoder for the FP7 is a bit of a disappointment. While the FP7 is advertised as DCC-ready, the current decoder from Digitrax requires additional work to install. You can remove the factory-installed light board by simply removing the two screws from the top of it, however, this will not loosen the LED headlight. You will need to use a soldering iron to remove the two LED wire leads from the factory light board. Mark them for which is the right and left side, or refer to the picture in this review: the green wire connects to the fireman's (left) side, and the yellow wire connects to the right side. You will have to re-solder these wires onto the decoder, being careful not to create a short circuit between the two terminals. Then, place insulating tape on the frame under the headlight terminals. (Previous Intermountain F-units are known to short out and fry the decoder if you don't place electrical tape over the spot where the wires leave the decoder.) Thankfully, you can skip the whole headlight switching procedure on your B-units, as there are no lights anyway! Once you replace the decoder and reinstall in the board-mounting screws, your locomotive should be good to go. Place it on a program track and try to write the address to it; if it works, you're all set!

As of this writing, the only decoder available for the Intermountain FP7 is the Digitrax DN163I2. This is a solid and reliable decoder, but I found it overly complex and its speed control was rather poor out of the box. As you see in the By-The-Numbers test data, the minimum speed of the locomotive increased by 10, and in doing so, it also became noticeably jerkier and less reliable at low speeds. The FP7 is hardly a switcher, yet I feel I can expect a DCC decoder to not hurt a fine locomotive's performance. Top-end speeds rose only slightly, but mid-range speeds were inexplicably doubled, from 40 scale MPH to 88! This results in even worse performance, due to speed steps 1-63 controlling what should be all of the locomotive's realistic throttle range, and steps 64-126 having control over only about 20 scale MPH (all of which is above the FP7's advertised max speed of 65 MPH). You will need to perform plenty of programming, testing, and re-programming on CV5 (Top Voltage), and CV6 (Mid Voltage), to get the FP7 to behave itself at least as well as it did before you put the DN163I2 into it.

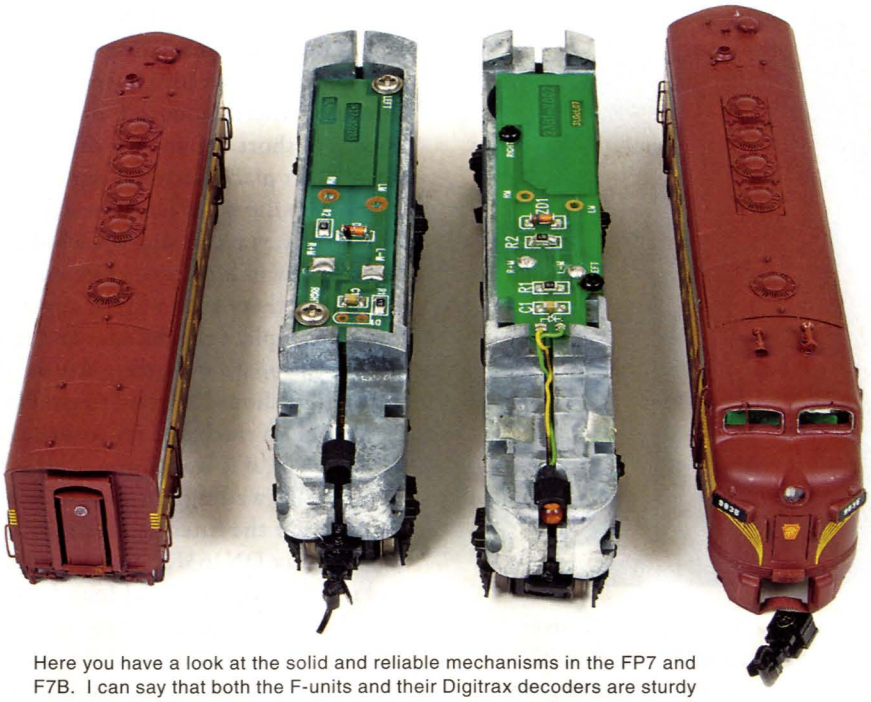
While I thought to try a different DN163I2, I chose to instead try the F7B and see if it ran better under DCC. I used the Digitrax DN163I1C in the F7B, and found similar or worse results compared to the FP7. Checking the By-The-Numbers speeds for the F7B, it is faster than the FP7 on both DC and DCC, but the midrange speed of 94 scale MPH and the top speed of 130 were excessive by far. This installation required no soldering, so I merely unscrewed the decoder and dropped in another DN163I1C. I was disappointed to find the exact same results.

I would have given Digitrax a break on my criticism if their decoder had been easy to reprogram and compensate for its issues, but as I have found

These models are very well detailed, with good mold and paintwork to boot. The PRR units may need some specific details added to match their as-built appearance, but Intermountain has given detail-oriented modelers a great start on the A-unit and a nearly exact B-unit.

with my other Digitrax decoders, their instructions are very unclear and that greatly complicates reprogramming the decoder. Speed control CVs (2, 5, and 6) were easy enough to fix given a few minutes' testing, but getting the locomotive to respond to a speed step below 9 required much more time than I wanted to spend. I had to look for instructions online to adjust CVs 55, 56, and 57 just to get the Back EMF (Electro-Magnetic Force) pulse feature to work as well as most of my other decoders work out of the box. I set CV55 to 150, CV56 to 39, and CV57 to 16, and I managed to get some of the FP7's excellent creep speed back, starting right on step 1. You'll want to adjust those values, though, as I still don't have them accelerating smoothly, even after a lot of experimentation. I may excuse sub-par speed control in sound decoders or decoders with space constraints or other justifiable limitations. Digitrax faced no such limitations on the Intermountain F-unit line, but their decoders still hinder the locomotives' operating smoothness.

Once up and running beyond the shaky low-end of the throttle, the FP7 and F7B evened out and ran smoothly and reliably. Their mechanisms run together so well that I have their speed range CVs set exactly the same. Light control on the FP7 is reliable, and they almost never lose electrical contact or stall. The decoders also run quietly and don't exhibit excessive heat problems.



Here you have a look at the solid and reliable mechanisms in the FP7 and F7B. I can say that both the F-units and their Digitrax decoders are sturdy and solid runners, you just need to be up to the task of manually reconnecting the headlight and programming the decoder a fair amount to fix some speed control problems that don't exist in the stock Intermountain model.

Once you get the headlight soldered, the speed control programmed reasonably, and the FP7s up to speed, they're good runners, even under DCC.

Looking Back

N-scale modelers are fortunate to have the well-detailed, smooth-running FP7 model added to Intermountain's excellent EMD F-unit line. With excellent looks and amazing performance, this is a winning locomotive indeed.

DCC operators should approach this conversion with due caution, knowing you need to work with soldering and electrical taping. Once installed, you'll need to program the decoder to get it back to its excellent DC performance capabilities. But with the ability to mostly remedy the Digitrax decoder's faults and the possibility of other decoders hitting the market, there's no reason DCC users should avoid Intermountain's excellent FP7.

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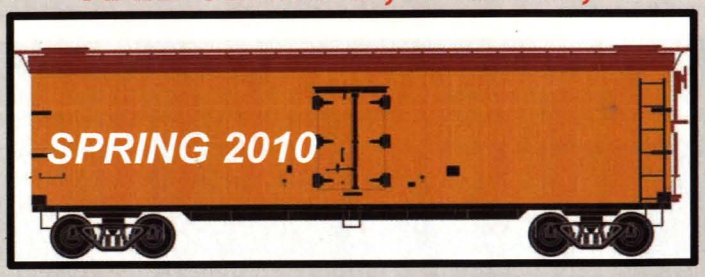

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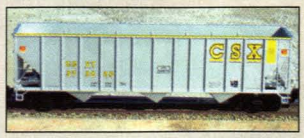

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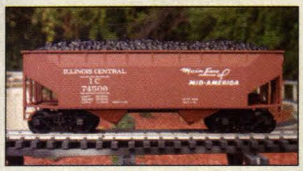

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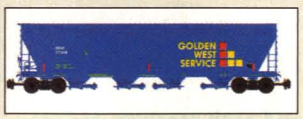

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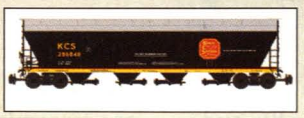

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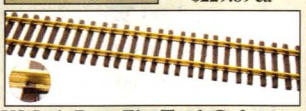

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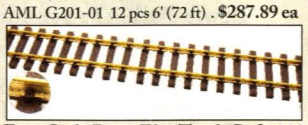

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Cover Story

REVIEW Large Scale

Aristo-Craft's new Train Engineer Revolution G debuts

Has the best train control system arrived?

Review and Photos by John Sipple

Train Engineer Revolution prices:
Transmitter/Receiver set, MSRP: $300.00
Transmitter alone, MSRP: $200.00
G Receiver, single, MSRP: $116.00, Six pack, MSRP: $525.00
G Smoke board, MSRP $22.50, Six pack MSRP: $100.00
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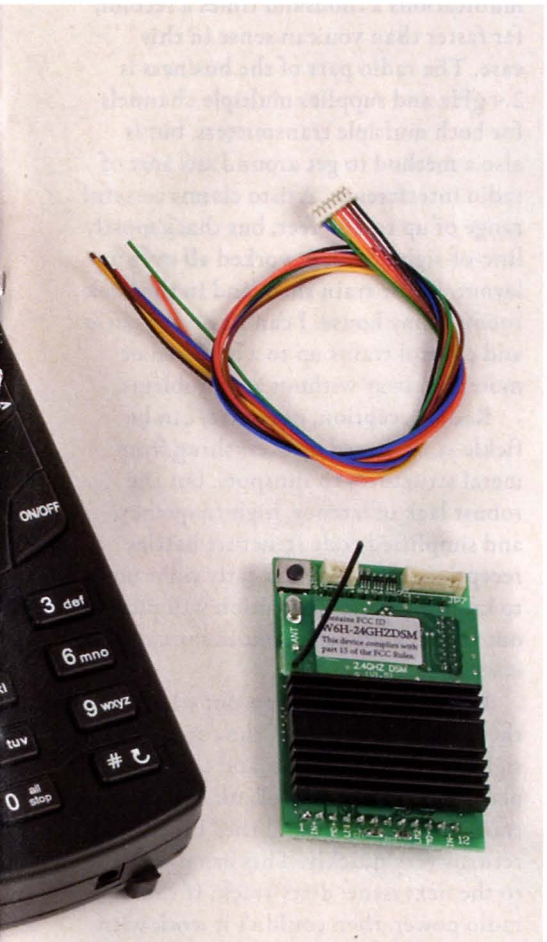
THE DICTIONARY offers many definitions of "revolution" depending upon what you are describing. I like the one that defines it as "a dramatic or wide-reaching change in the way something works." This certainly describes the Crest Train Engineer Revolution. We have the "G" version, intended for Garden Railroading's Large Scale trains, so we need to also define the proposed market while we're at it. Both "O" and "HO" versions are coming soon.

Despite the long, entrenched presence of Battery/RC out in the garden and new incursions by Trackpower/DCC, far and away the most common operation power mode for this scale neighborhood is plain old ordinary DC. That's the way virtually all locomotives arrive, and it's my opinion that anyone who could tap half of the straight DC crowd would outsize the market for regular RC and DCC combined without getting into either market! We can confidently predict the three things it takes to sell a technology upgrade to a straight, trackpower DC user: easy, easy, easy.

Lewis Polk, the president of Aristo-Craft and Crest Electronics, joined forces with an engineer and spent the last two years looking over all the possible options that could be built into a control system and defined an incredibly complex list of requirements, with Easy being the first. He chose to go with Radio Control (RC), but not like other offerings on the market. He chose a sort of cell phone chip from Texas Instruments to be the core of this, but one in both the transmitter and each receiver. He set the operating frequency at 2.4 gHz, high enough to nearly eliminate ground plane reception problems, and he chose a very large LCD screen and button layout that would make it all easier to use.

Now let's understand, up front, that there is no way I could explain all the tidbits, details, bells, whistles, and capabilities of this new system in a single review. I couldn't do that with DCC, DCS, or any other new system, either. Instead, I'm going to point you to the Aristo-Craft web site and other contact information so that you can read the owner's manual and a half dozen other documents that will begin to help you grasp the fullness of this product. And



Here are the hardware components of the Revolution G starter set. It offers the transmitter, in the center and the receiver to its right toward the bottom. Above it is the auxiliary cable to operate lights and sounds through the receiver. Above left is the adapter board for locos that lack the Aristo Super Plug. Below that is the external linking button and at the bottom left is the smoke control board.

I'm going to address the impact of it on garden model railroaders and what it might mean to you, if you choose to go this way.

So how does it work? I visualize the process in a rather triangular fashion. In your hand is a transmitter, in your locomotive is a receiver, while connected to your tracks is a constant 12 to 24 Volt DC power supply, this latter part not included with the set. I've got a couple of such power supplies, including the Crest Elite. I tried running it through my old Train Engineer but found I got better throughput using the Elite, with its pure, switching power supply, directly. This put 22 volts of DC power at 13 amps onto my rails.

The first reality of the Revolution is found right there. Each receiver is capable of handling between 12 and 24 volts at 5 amps continuous and 8 amps peak. My first installation took advantage of the Aristo Super Plug, a dual header design found in most recent Aristo-Craft locomotives. In this case, it was a Dash-Nine wearing SuperFleet Warbonnet, No. 600. Back when I reviewed this loco in 2004, I found it weighed 15 pounds 10 ounces and posted 5 pounds 6 ounces of pull. We shouldn't be surprised that this brute also pulled 3.5 amps at full speed and 7.5 amps when at full slip.

This was an easy conversion due to the switch plate under the snap-off engine compartment cover. Simply unscrew the switch plate, remove the smoke unit, and then invert the panel to find the Super Plug. I removed the existing occupant and installed the Revolution receiver. But I wasn't done. I also received as part of the starter set a smoke controller board. In essence, I unplugged the two-pin jack from the smoker and plugged that into the "Power" receptacle on the board. Then I took the "Smoke One" plug and inserted it into the smoke unit, tidying up the unused "Smoke Two" which is for two-smoker units. Finally, I splice the two control wires from the new smoke controller board and spliced them to the brown and black leads on the six-pin accessory plug that was also included. The last detail was to mount the link button up on the control panel in a hole that was already there. Then I put it all back together and closed it up.

I took the loco and placed it on my powered track and saw that the ditch lights were lit. Then I followed the directions in the Installation and Operation Manual. I set the transmitter first, and it's important to know right away that all loco information is held in the transmitter; the receiver is essentially "dumb," in that it doesn't remember anything except its own management job. Therefore, my first task was to add a new cab and tell the transmitter all about No. 600. The first step in this is to select a Link Address for this new cab. The system allows you to set up 50 different addresses or "cabs," 00 through 49. A cab can be a single unit (SU) or a multi-unit (MU). The actual address number is more for system use because you will also give this loco a name and a roadnumber, both of which will be displayed when you go scrolling for a locomotive. Naming a locomotive is similar to putting names and numbers into your cell phone's address book. Multi-presses of keys in the keypad give you the numbers and the letters, along with spaces and other characters.

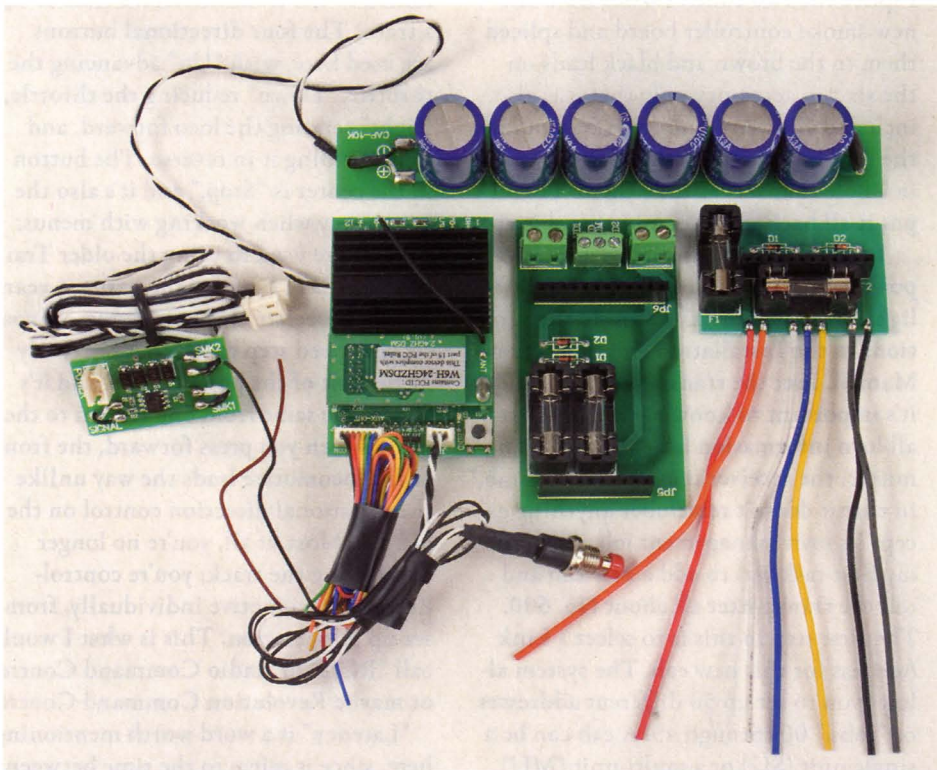
While you are working in the "Assign Function" submenu, you can also tinker with Momentum, Speed Curve, loco direction, headlight direction, Start Speed, Top Speed, Auxiliary Function Set-up, and finally, Linking. The first time you do this, it all may seem a bit fussy, but once you've messed with it a little, it gets much easier. When you get to the Linking item, you'll see a display that lets you know the Transmitter is looking for the locomotive receiver that you intend to designate with this Cab. You complete the process by pressing the linking button on the locomotive that you installed (or the one found on the receiver board) and hold it until the headlights (and also a small LED on the receiver) begins to flash. After that, stop pushing the button and wait a few seconds for the system to finish up. You will know this is completed successfully because the display on the bottom row will go from "nolink" to "linkok."

With power on the track and the loco linked to the transmitter, it's time to run a train! The four directional buttons are used here, with "Up" advancing the throttle, "Down" reducing the throttle, "Right" sending the loco forward, and "Left" sending it in reverse. The button in the center is "Stop," and it's also the "Enter" key when working with menus.

If you're used to using the older Train Engineer (as I have for the past ten years), you'll appreciate this new system. If you set the speed step to 71, that's actually 71 percent of the power range, and it's always the same from one session to the next. When you press forward, the front of the locomotive leads the way unlike the situational direction control on the old TE. Most of all, you're no longer controlling the track; you're controlling each locomotive individually, from set-up to operation. This is what I would call "RCC" or Radio Command Control or maybe Revolution Command Control.

"Latency" is a word worth mentioning here, since it refers to the time between when you push a button and the action actually takes place. The less latency, the better, and I saw very little latency in this system. Talking to Lewis Polk,

These two items are two sides of the Revolution's triangle; the third would be some sort of pure DC power supply that provides 12 to 24 volts. This could be track or battery power. These two are not in scale with each other, but they can be in constant communication at 2.4 GHz.



Operating the Revolution system starts pretty easy and becomes very easy after some practice. First, however, you have to install some stuff in each loco you wish to control. At the top is the capacitor board that smoothes out operations in an amazing way. Left to right below is the Smoke board, the Transmitter, and the adapter board for "Non Plug N Play" locos. The final item is the adapter board to do much the same thing, only with wires.

I found out why. That very high-cost cell phone chip updates two-way communications a thousand times a second, far faster than you can sense in this case. The radio part of the business is 2.4 gHz and supplies multiple channels for both multiple transmitters, but is also a method to get around any sort of radio interference. Aristo claims a useful range of up to 400 feet, but that's mostly line-of-sight. Still, it worked all over my layout, in the train shed, and in the back rooms of my house. I can sit on the patio and control trains up to a hundred or more feet away without any problems.

Radio reception, of course, can be fickle stuff, hexed by everything from metal structures to sunspots, but the robust lack of latency, high frequency, and simplified code structure battles reception issues. It's too early right now to know how the Revolution will play out in every situation, but in my case, all is well.

I sometimes have drop-out when the loco passes through the cut, out of sight of the transmitter, and the display briefly goes to "NoLink," but the train keeps a-rollin' and the "LinkOK" returns very quickly. This brings us to the next issue: dirty track. If this is radio power, then couldn't it work with batteries? Absolutely, yes. You can either mount batteries inside your locomotive or you can build trail cars with batteries, though that's outside the scope of this review. It's enough to say that it's possible and solves all the dirty track issues, though it introduces charging and other issues.

For the track power modeler, there's another solution, however. Garden railroaders have long known that capacitors can supply power for a second or so when the loco hits a dead spot. Often this is sufficient to keep your loco rolling along. The challenge with capacitors is to get all the parts together and then wire them up correctly. If you run them on reverse polarity, electrolytic caps will explode with a pretty loud bang and a puff of dreadful smelling smoke. Can't have that.

Aristo has thoughtfully built the receiver with a special port on the bottom and a capacitor board plugs into it. The entire capacitor board is rated at 12,000 microFarads, which is a considerable amount of juice. Capacitors are like short-term batteries in that they store

up electricity for later use, though they usually don't store up anywhere near as much as a large set of batteries. However, for our purposes, 0.12 Farads is plenty and should be good for a second or so, depending upon the load. The minute the wheels hit live track, even if for only a second, the drain on the cap board stops and recharging takes place very quickly.

In practice, my Dash-Nine would lurch or stop dead without the board, but would breeze merrily along, unless it hit a patch so completely dirty it was, in effect, a dead zone. Adding the board to the transmitter has made a world of difference. It serves as an intermediate step between regular track power and batteries. The only downside to this is finding a space for the capacitor board inside your locomotive.

Multi-Unit Operation

You have as many as fifty cabs at your disposal and all the information is stored in your handheld transmitter, so let's take advantage of that. First, I created a new cab; in this case, I assigned it Cab-5. By this point, I had converted my Warbonnet SD45, an old favorite of mine. I set it up so that the long hood was the front, and otherwise dialed it in until I felt it fairly well matched the Dash-Nine.

With the Dash-Nine on Cab-0 and the SD45 on Cab-1, I created my new MU cab as Cab-5 and assigned the first slot to Cab-0 and the second slot to Cab-1, though the name and roadnumber of each loco was also displayed. An MU cab can handle as many as six locos in its six slots. Running them from their individual cabs, I coupled them together and then went to Cab-5 and just ran them! It really is just that simple. They ran perfectly together, especially when pulling a train.

I turned on the RRAmmeter and watched the amperage draw on the tracks; I have no effective method of measuring individual locomotive draw when in multiple operation, though I can measure each independently. What I discovered was interesting, but it didn't surprise me much. The two units collectively pulled just over the same amperage as just one of them pulling the same 18-foot train. This means that each individual unit was only drawing about half of what it pulled on its own. If my layout would support it and my grades were less, I'm sure this lash-up would handle a fifty-car train! If it wouldn't, I could easily add yet another unit.

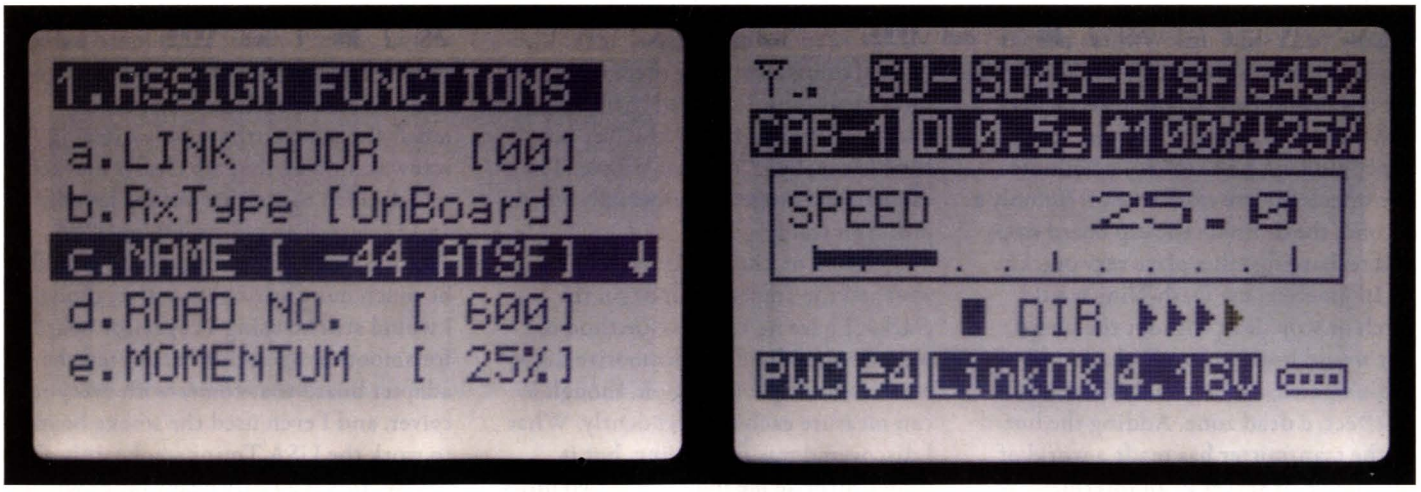
Other conversions and options

Operation is truly easy, but Aristo is doing a lot to make installations easier than ever. Included in every receiver is an adapter board that allows you to plug your receiver into the 12-pin header, and there are the same color output wires you would find on an HO decoder only in heavier gauge. Red and black are for track pickup, orange and gray are for the motor(s), and blue, white, and yellow are for the headlight and backlight. This allows you to convert a locomotive that doesn't have a super plug. There is also their "Non-PNP" board that serves much the same purpose only offering screw terminals that are clearly marked.

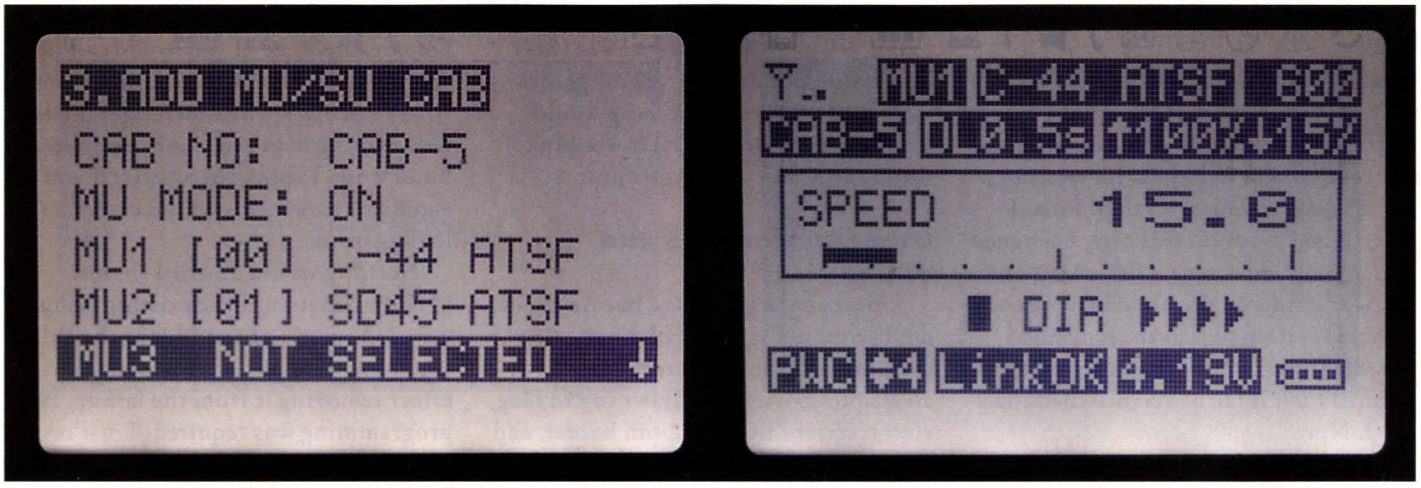
I decided to try this out for myself, and I selected an old friend, my USA Trains SD40-2. This conversion would be much more wiring intensive, though I would still be using a capacitor board for smoother operation. I adopted the adapter board that comes with every receiver, and I even used the smoke board to work the USA Trains smoke unit. Of course, this is a fairly heavy bit of wiring, since I had to trace out the wiring from the trucks, separating the motor wires from the pick-up wires. In the end, I've got an SD40-2 that works very well, but I'm not sure some of you would call it easy. I made a similar conversion to my USAT Alco S-4 with much tighter quarters, making it an even more complicated bit of work. I think the adapter board could be condensed such that it took a lot less space.

Nothing would do but I should MU the SD40 into the existing lashup, Cab-5. I could either add it as the third loco or replace one of the others, in effect removing it from the lashup. No programming was required; I just replaced one loco on the list with another. Three big six-axle machines are far more than I need on the point, but the rules of distributed power do apply. I extended the train out to 22 feet, which

Up on the ridge, Santa Fe has a two-unit lashup at the head of a hotshot freight. Setting them up for multi-unit operation was a breeze. Below in the yards, SD40-2 No. 5380 is pulling in with a ski train while S-4 No. 107 is spotting a string of coal hoppers for pickup. At 2.4 gHz, the antenna only needs to be about an inch and a quarter long and is relatively immune from "ground effect."



To add a locomotive into a system, first you create a Single Unit cab and then go to Assign Functions. This one shows "C-44 ATSF" with the "C" flashing, indicating I could change that if I wanted. This list scrolls down to the letter "O" which is where Linking takes place. On the operation screen, we see SD45-ATSF is a "SU" Single Unit. We also get a signal strength display in the upper left corner. I can go to 100 percent power but I've set it to start at 25 percent, since that works best for this particular locomotive.



Any locos that have been added as Single Units may be then put into a Multi-Unit Cab. The first screen shot shows Cab-5 with MU mode "on" and both the C-44 and the SD45 have been added. The other screen shot of this pair shows this MU Cab in operation. Because the C-44 was the first on the list, it becomes the lead loco. All of this lends simplicity to the wealth of choices. If I wished, I could MU together all four receiver-equipped locos, though that would make a rather improbable lashup.

is thirteen cars in this case, and it was far more than any single loco of the set could handle. Any two of the locos handled it without a problem. Thanks to the capacitor boards, all three locos behaved very smoothly and worked well as a team.

Available documents (go to AristoCraft.com and choose the "Technical Support" choice from the vertical menu on the left) detail how to adapt the Phoenix 2k2 and the Dallee Sound Board. Neither is Plug-N-Play, but both are quite possible. See the instructions for what is involved.

Comparing to DCC

DCC uses a specialized AC current with signals imbedded in it, so the capacitor board trick is more complicated and requires special circuitry. One DCC maker has an expensive solution for the smaller scales; all have ignored the large-scale issue for now.

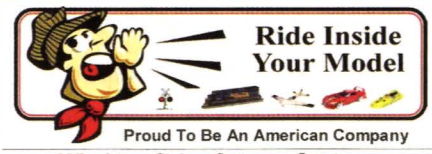
Standing power on the tracks is a good way to deliver track power, but AC and Pulse Width Modulation can lead to wheel pitting. Pure DC power on the rails causes less pitting, even at very high amperages. Adding in the capacitor board can give a garden railroader a better operating experience, but it may not help much in some environments or with certain locomotives. In that case, battery power may be desired, and if Revolution operators discover this, they can switch to battery power simply by buying the batteries and altering the wiring.

Finally, the options for configuring a locomotive aren't controlled through Control Variables and programming as is the case for DCC. Rather, the Revolution process is one of menus in plain English, easily scrolled through and selections made. The screen is large, easy to read, and filled with the information you need.

Wrapping it up

I am really impressed by the Revolution system. It arrives very fully formed, but be aware this is like any other first generation technology; it has some growing to do. I can see some minor issues for the next generation, but the main product is excellent. The good news is Aristo can fix and grow the process without you having to buy new receivers; they only have to alter the transmitter.

There is more to this RCC system than I can begin to cover, so fill in the gaps of my presentation by visiting their web site or phone them for hardcover copies. The technology, the price, and the time are ripe for the Revolution, and it's ready for us.



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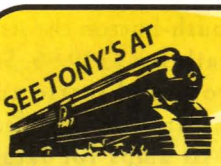

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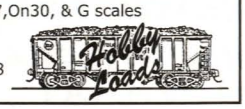

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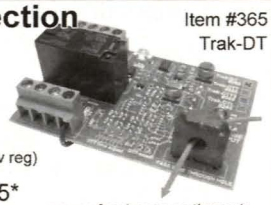

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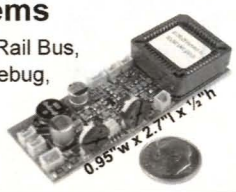

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Lenz offers new upgrade for DCC sets

Version 3.6 allows for F0-F28 Reading CVs on the main with RailCom

DCC — Lenz has announced a new upgrade for its line of DCC command stations that allow for a better operating experience for Lenz users.

The LZV-100 integrated command station/power station has three microprocessors for superior performance and operation and includes an integrated power station that can deliver a full 5 amps of DCC track power. Lenz states that its system supports all forms of track wiring styles including common rail, two rail, and home return. Track voltage is fully programmable from 11 volts to 22 volts. The LZV100 set includes features such as advanced queue management and an internal database that supports a roster up to 256 locomotives. According to Lenz, the LZV100 has the RailCom signal cutout hardware built in for two-way DCC communication.

Lenz' Set-100 and Set-90 support 31 XpressNet handhelds; 4-digit addressing; all forms of programming, including one step address programming and operations mode programming; layout control feedback; advanced consisting; control of 256 locomotives and 999 turnouts; and DCC functions (F1-F28 plus F0 forward and F0 reverse).

Lenz' throttles, LH100 and the LH90 (version 3.6) can also create momentary functions on per locomotive basis. The LH100 (included with the Set-100) is ideal for users who enjoy the greater precision of push button control. The LH90 (included with the Set-90) is ideal for those who want smooth rotary style. Both throttles can be added to either system.

Lenz's DCC sets are currently available for the following prices: Set 100 with LH100 push-button throttle and LZV1000 retails for $399.95, Set-90 with LH90 rotary throttle and LZV100 retails for $299.95. Set-100/10 provides 10 amps for larger scales for $574.95, and Set/LI with Loco CE for WiFi wireless operation retails for $399.95. (Editor's note: We inadvertently published older pricing information for these sets in our June edition. We apologize to Lenz and to our readers for any confusion or inconvenience this caused.) For additional information and a full explanation of each sets' features, please visit the company online or visit your nearest Lenz Dealer.

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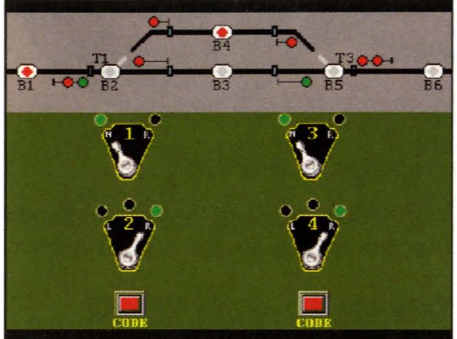
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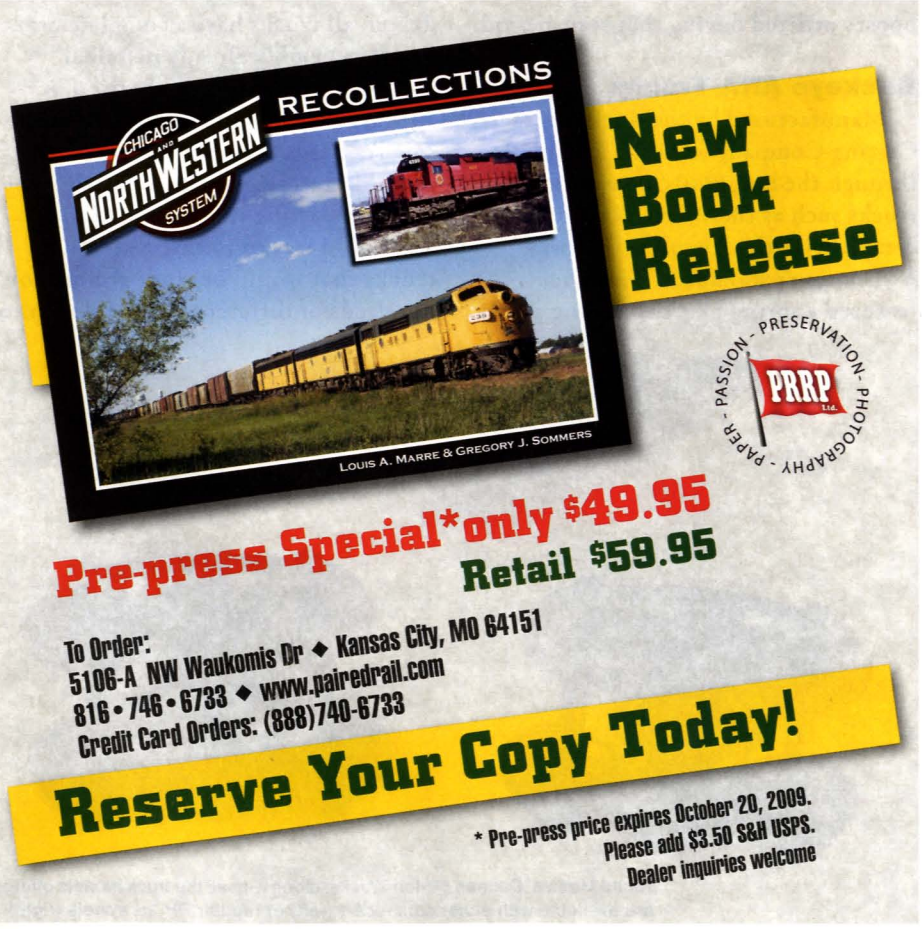
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REVIEW HO

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Review and Photos by Dick Foster

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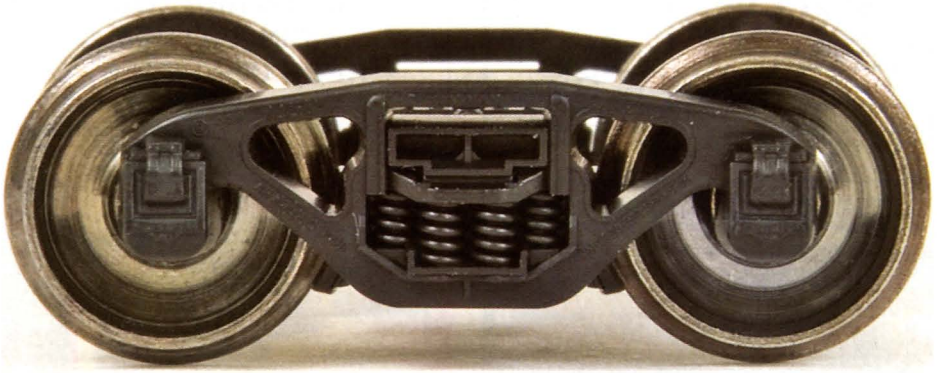


Detailing is amazing and includes the manufacturer's name and various numbers on the side frames as per the prototype. Brake shoes and hangars are also included.

TAHOE MODEL WORKS has been very active in engineering and producing a large series of HO-scale RP-25 and Semi-Scale truck sets for our hobby. Brian Leppert, the owner, is obviously very passionate about researching and adopting the plans of some of the most famous truck designs from the 20s through 50s era because it really shows in his product line.

Dalman 2-Level Trucks

The Dalman 2-Level 50 ton truck first appeared in the 1920s and was used on many of the freight cars built during this period. The trucks used additional springs to give a smoother ride and were found on roads such as the C&O, CGW, Illinois Terminal, Milwaukee, MKT, NC&StL, Pere Marquette, and many Texaco 10,000 gallon tank cars.

The trucks could also be equipped with a Barber Lateral Motion device to reduce wear to the wheel flanges, journals, and couplers. Railroads that used this version included ATSF, CN, CP, Central of New Jersey, CB&Q, CNW, IC, MP, NP, Rock Island, and SP. Tahoe Model Works offers the trucks with or without the lateral motion detail. Also available are AC&F Archbar trucks, Buckeye ARA 50 ton trucks, and Bettendorf swing motion trucks.

ACF Archbar Trucks

Tahoe modeled its ACF Archbar truck from a prototype found in the Illinois Railway Museum. It has a 5-foot 6-inch wheelbase and is suitable for 40- and 50-ton capacity cars.

Bettendorf Swing Motion Caboose Trucks

The swing motion truck was manufactured by the Bettendorf Company from 1924 through the early 1930s. Some of the railroads that utilized these trucks included ATSF, Burlington Northern, CB&Q, Erie, Erie Lackawanna, Milwaukee, MKT, MP, NKP, N&W, Pere Marquette, and Rock Island. These trucks could be seen under many of the different types of cabooses utilized during that time period.

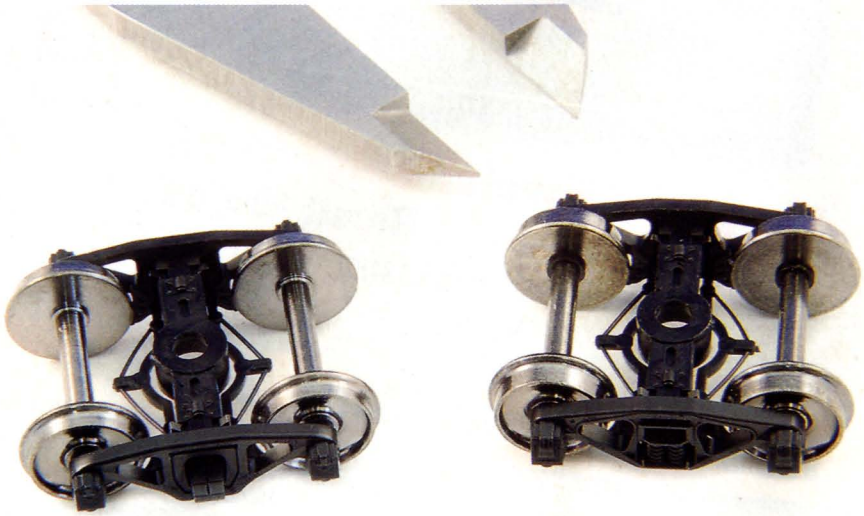
Buckeye ARA Trucks

Manufactured by the Buckeye Steel Casting Company from the late 1920s through the late 1940s, conventional trucks such as these were designed to comply with the American Railway Association's standards. The truck featured a spring plank spanning across both side frames, and in each side frame, four coil springs grouped close together.

Tahoe's HO-scale Trucks

What struck me first in looking at the various truck designs was the fact that each type is offered in RP-25 and "semi-scale" .088 wheels. In either configuration the quality is the same: "Outstanding!" My recent tour through Brian's facility showed me that the time he takes to make sure each side frame is accurate and highly detailed pays off in one of the best, if not the best American-made freight car truck. In addition, all trucks have a complete brake hangar assembly already installed.

Upon microscopic inspection, it appears that every major detail on the side frames is accurate including the raised lettering, which can easily be read! One thing that Tahoe Model Works did was to release a series of trucks that would be right at home on hundreds of different cars on dozens of



Tahoe Models' Dalman 50-ton Trucks, along with all the truck models offered, are available with either semi-scale (left) or regular RP-25 wheels (right).

HO SCALE
The Dalman 2-level truck used additional springs to give a smoother ride. Many freight cars built in the 1920s used Dalman trucks. Railroads using this version include C&O, CGW, IT, MILW, MKT, NC&StL, PM and many Texaco 10,000 gallon tank cars.
One-piece black acetal plastic moldings with sperate brake shoe details, made in U.S.A.
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TAHOE MODEL WORKS
5801 Sheep Drive #7

Each truck set includes detailed information about railroads that used a particular type of truck, as well as other factual info.

Currently, Tahoe Model Works offers six types of trucks and others are being readied for production. Shown are: Dalman 2-level 50 ton trucks, Dalman 50 ton trucks with lateral motion detail, AC&F Archbar trucks, Buckeye ARA 50 ton trucks, and Bettendorf swing motion trucks.

different railroads. Each set of trucks is packaged in a clear plastic bag attached to a label card that provides a quick history of the truck and a list of the railroads that used that style and the time period of use. Also, reference is made to where Brian did additional research for a specific model, such as the Western Pacific Railroad Museum, Niles Canyon Railway, Niles CA, and other notable freight car displays.

I mounted a set of swing-motion Bettendorf Caboose Trucks under one of my regular cabooses for a test run. I had turned around to get something and when I turned back, the car was long gone. In this case it had rolled almost the full length of my garage layout, due to a very minor downward slope to the floor. I had forgotten that I hadn't compensated for this slope when building bench work and laying track. Most of my other cars just stay put, but not the caboose! This is a testament to the free rolling qualities of the Tahoe Model Works trucks.

Brian told me they go to extra lengths to be sure that the Intermountain wheel sets are as true running as possible and meet the same standards as the side frames. Even though the wheels would probably be okay for our normal cars, Brian strives for the best and a small number of wheels are rejected during the assembly and testing phases.

Final Thoughts

Brian has put together a list of many of the freight cars and cabooses that, over the years, have been equipped with the style trucks that Tahoe Model Works offers. These sheets are available from them with a simple phone call. Unfortunately they do not have a web site at the present time.

After spending time replacing wheels in the inexpensive and often poor quality frames that come with a number of freight car and caboose models, it is fortunate that our hobby has someone like Brian Leppert and his Tahoe Model Works to turn to for a quality free rolling truck. I certainly would recommend any of his trucks and look forward to additional trucks in this series.

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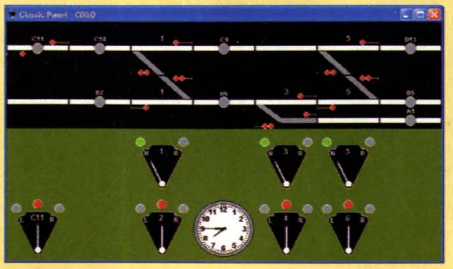
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Shop Talk with Brian!

Story and Photos by Dick Foster

Hidden away in a small industrial park east of Carson City, Nevada, is the home of Tahoe Model Works. They produce only one product line, HO-scale freight car and caboose trucks, and they are among the best in the industry at it. I recently had the opportunity to shadow Brian Leppert, the owner, chief design engineer, and jack-of-all-trades for Tahoe Model Works around his shop and see first-hand what it takes to create a high quality truck.

Brian set up shop after working for eighteen years with Model Die Casting as a tool and die maker. When Horizon Hobby, Inc. acquired MDC, Brian bid on, and acquired, a number of machines and computer aided devices so that he might set up his own business. His startup date was November 2004.

Setting up the shop and getting some of the machines to work properly took some time, along with designing and making the truck mold and side frame inserts. During this time the CNC mill failed, and as the electronics were no longer made, he had to order a new machine and wait three months for delivery. June 2006 saw the introduction of both versions of Tahoe Models' Dalman truck.

In the beginning, Brian had the idea that he wanted to make HO-scale freight car kits; however, after working on his first car and truck kit, he realized the market had moved on to the more conventional ready-to-run (RTR) type of offering. In Brian's estimation many of these cars were very well done, but the trucks left much to be desired. Brian then saw the potential to introduce a very high quality HO truck set, which he had designed for his freight car kit, to replace the many hundreds of thousands of cheap inaccurate plastic side frames and plastic wheel sets that came on the RTR cars.

Just coincidentally, Brian had a fascination with the large variety of railroad trucks that were rolling around America's railroads. It appeared to him that there were almost as many designs as there were trucks. Over the years, various manufacturers had experimented with coil springs, leaf springs, and roller bearings to make their trucks ride smoother and more safely. The evolution of the truck had been going on since the 1800s. Brian set his focus on the period from 1920 to the 1950s.

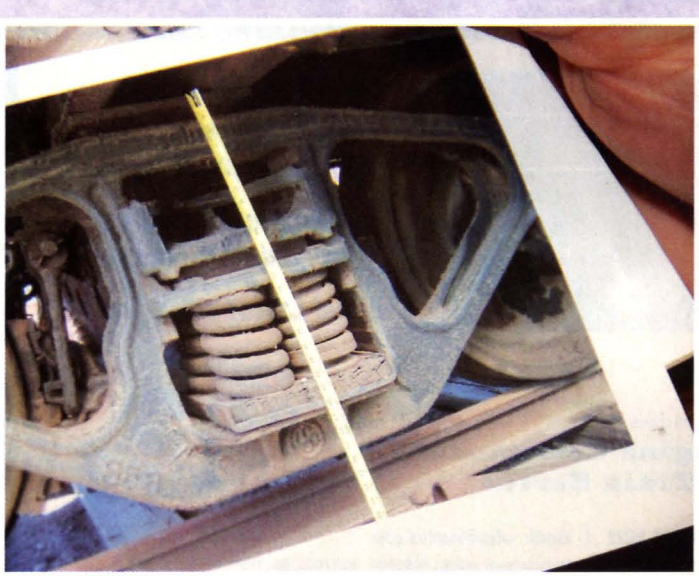
Having gained several years of experience during his tenure at MDC, Brian understood that research and engineering were essential to his goal of making the most prototypical and best rolling HO wheel sets in the model railroad industry. Brian's extensive library — collected from years of catalogs, manufacturer's ads, and compilations of truck designs — is generally the first place he turns to once he'd settled on the model of truck he is going to manufacture. In addition to his own library, Brian makes extensive use of actual trucks he finds in his travels to places such as the Western Pacific Railroad Museum, and the Illinois Railway Museum.

He has also done research at the Orange Empire Railway Museum at Perris, California, and the Niles Canyon Railway in Niles, California. Using a combination of the Car Builder Cyclopedia and actual on-site measurements, he refines his measurements and checks other details of the truck design. Often there are minor mechanical and casting changes that aren't reflected in the manufacturer's original drawings and Brian wants above all, to have an accurate reflection of the finished prototypical truck.

Once the drawings are accurate and complete to Brian's satisfaction, the long task of milling the dies begins. Brian credits Cliff Grandt of Grandt Line products for helping him learn much of the die making business, many years ago.

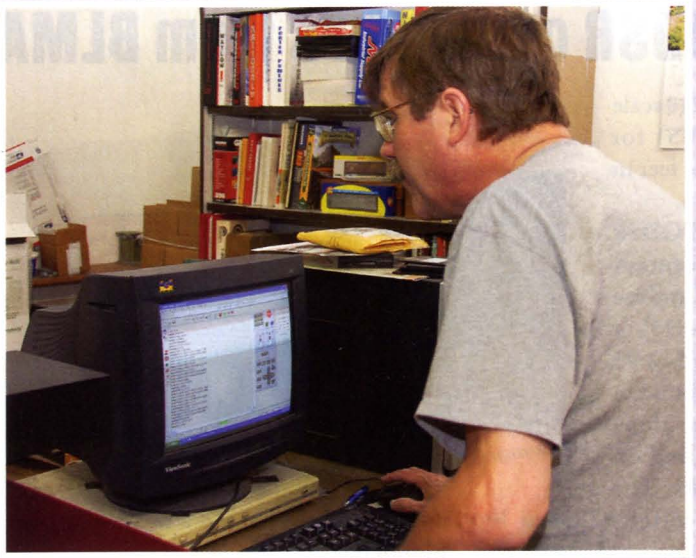
"Watching Grandt make those fine window mullions and perfect doors led me to refine my die making skills," Brian told me.

Brian pointed out that the evolution of Computer Aided Design (CAD) programs has become the standard way all dies are produced today. From a basic PC running the CAD/CAM (Computer Aided Manufacturing) complex conversion programs, Brian then transfers his CAD design to the complex CAD/CAM milling machine. Brian stated that this machine, which costs in the mid five-figure numbers, is just a drop in the bucket for some of the larger firms. The CAM program, which drives the milling machine then directs the various cutting tools to make the intricate die for the truck side frame. The cutting tools Brian



Often many dozens of field measurements are used to help make the "perfect" model truck.

Measurements and all details are entered into the CAD program that will be used to make the final dies for a truck.



Brian carefully watches his computer information being translated into the CAM language to drive the precision milling machine.

A test injection is made so Brian can insure the complete accuracy of a new truck release.

uses in this machine are also carefully designed and shaped by Brian for each type of truck design.

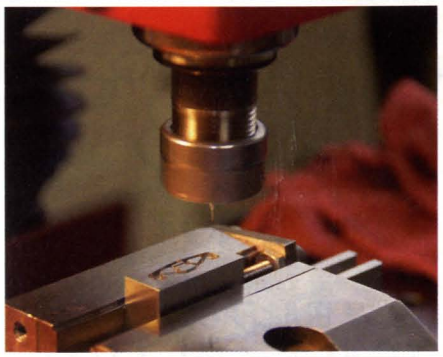
According to Brian, it often takes over three months to make a pair of dies to his tight specifications. Each truck needs two die inserts, one for each side frame. Often it is a matter of trial and error to see how a part is turning out. Many times a part is test injection molded and visually inspected only to find that more work must be done to get the detail perfect.

While we were in his shop, Brian found a raised rib around a truck side frame opening wasn't showing well enough in the molded piece. Brian then refined the measurements, entered the data, and told the milling machine to make additional cuts. This often entails making a new cutting tool to achieve the desired look. Once the die is complete and a test molded side frame meets his specification, Brian then commits to making a product run with the injection-molding machine. The finished piece that comes out of the injection process contains a total side frame and brake shoe hanger assembly.

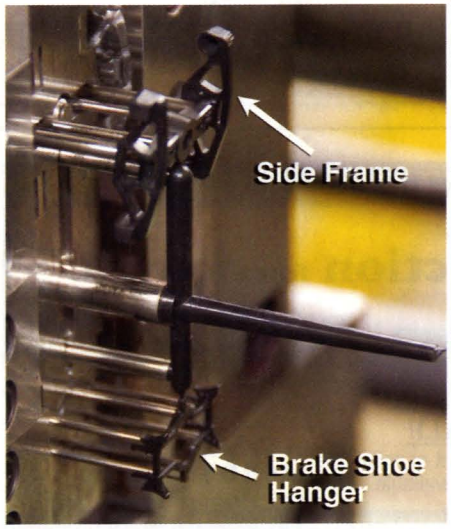
Brian then turns to the test and packaging area for final assembly. Each Intermountain wheel set is checked for accuracy and correct flange spacing before insertion into the plastic truck side frames. Often Brian will reject a wheel set for wobble, incorrect flange spacing, or a variety of other minor defects. Some of these defects would not affect the average modeler, but Brian's goal is to make the best possible scale truck he can with great rolling qualities. Finally, the trucks arrive at the test track — nothing is very sophisticated about the track; it's nothing more than a three-foot piece of flex track with a very gentle slope. If the truck passes Brian's "rolling test" then it is packaged and made ready for delivery. This low-tech approach may be yesterday's technology, but Brian's touch and expertise assures the end user will have a perfect, high quality and free rolling truck.

As Brian explained to me, he releases all of the trucks in two different models. Both models use the same side frames but come with either the RP-25 NMRA .110 contour, or the .088 contour for the Fine Scale modeler. I asked Brian if one sold better than the other, and he said that the sales were almost equal in both formats. Recently, several manufacturers have been in conversations with Tahoe Model Works about supplying them with the proper trucks to go along with their future car releases. I believe this can be a win/win situation for both parties.

After spending a few hours with Brian, who is a quiet but passionate person, about his business, I came away from Tahoe Model Works with a greater appreciation of the many hundreds or thousands of hours that go into making something that a lot of us take for granted. When we see a 30- to 50-car HO-scale train cranking across our layouts, we often forget the many months of thought, hard work, frustration, and final success that many skilled hands have brought to bear on the cars, and in the case of Tahoe Model Works, the trucks that all these hundreds of thousands of model railroad cars roll on. I know a lot of model railroaders look forward to trying the various models of trucks offered and am hopeful business for Brian and Tahoe Models Works will keep on rolling along!



Here a 7/1000th inch cutting head is used to add extra detail to a side frame die.



Here is a complete sprue just released from the molding machine. It contains the side frame and complete brake hangar assembly.

Wrought iron fencing and PODSR containers from BLMA

N & HO — BLMA Models has added Wrought Iron Security Fencing to its line of N- and HO-scale detail products. Also available are HO-scale PODSR Moving and Storage Containers. BLMA manufactures an array of figures, billboards, signals, structures, and more.

According to BLMA, the Wrought Iron Fencing is chemically etched from stainless steel, features accurate dimensions, fine-scale detail, and a gate. The scale 6-foot tall fencing is available in 210 scale feet in N-scale (#705) for $18.75, and in 110 scale feet in HO (#4205) for $18.75.

The new HO-scale PODSR Moving and Storage containers are fully assembled and are available for $9.45 (#4115) or in a 2-pack (#615) for $12.95. These containers are found in business parking lots, along highways, and traveling on custom flat bed trucks. The containers are officially licensed by PODSR Corp.

BLMA offers HiDef videos of the fencing and PODSR containers being utilized on the company's web site as well as on a youtube page: www.youtube.com/blmamodels.

BLMA Models, 16623 Pear Blossom Ct., Whittier, CA 90603; 562-712-7085; E-mail: sales@blmamodels.com; www.BLMAmodels.com

Two tank detail set modifies O-scale tank cars

O — Southern Car & Foundry is offering a Two Tank Detail Set in O scale to modify existing models. The kit's instructions provide color images and tank assembly directions. Components of the kit includes: cast resin parts of the round tank and square tank, filler hatches, timber and metal support pieces, and a tool box. The kit (#O-2001) retails for $35.00, with a shipping cost of $6.00 for up to six kits; it can be ordered from Southern Car & Foundry.

Southern Car & Foundry, 970 Sunshine Lane, Ste D, Altamonte Springs, FL 32714; E-mail: jscagle@msn.com; www.southerncarandfoundry.com

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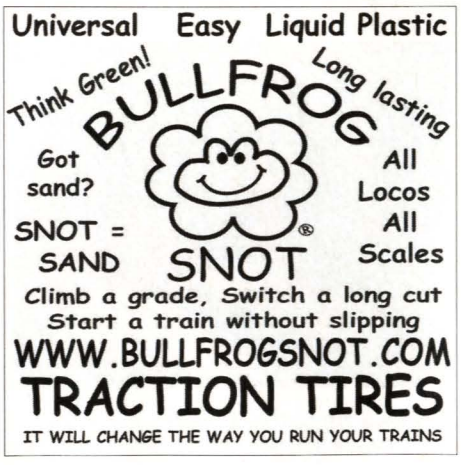

Head for the hills with BPH's SceniKing photo backdrops

SceniKing's newest backdrop features elements such as a small country church, rolling hills, and a mountain lake. Though advertised for N, HO, and O, the backdrop can be utilized in S-scale as well.

N, HO, S, O — BPH Enterprises has released new SceniKing photo backdrop kits to create the feel of a quiet eastern valley. Stretching almost 24 feet behind O-scale railroads, kits R033, R034, and R035 each cover 93.25 inches by 13.5 inches, and connect to take a railroader past a quiet country "Church in the Valley," a pretty "Mountain Lake," and out into lust green forest backed by "Distant Hills." Kits R036 and R037 create the same scene in 15.5 feet for HO, while a single kit R038 supports N scale. The top edge of the full scene is a constant sky blue, enabling upward extension using matching paint.

SceniKing photo backdrop kits are printed as individual panels on 8-1/2 inch by 14 inch, 24 pound paper. The suggested retail prices for each O or HO kit is $39.95, for N scale it is $27.95. Though not advertised as such, the HO/O backdrop may be incorporated into an S-scale layout as well.

BPH Enterprises, 4 Palmer Dr, Barrie, ON L4M 9V4; 705-739-4878; E-mail: les@sceniking.com; www.sceniking.com

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REVIEW Book

The Colorful World of Billboard Reefers

Review by David Otte, photos as noted

Billboard Refrigerator Cars by Edward Kaminski and Richard Hendrickson, MSRP: $60.00

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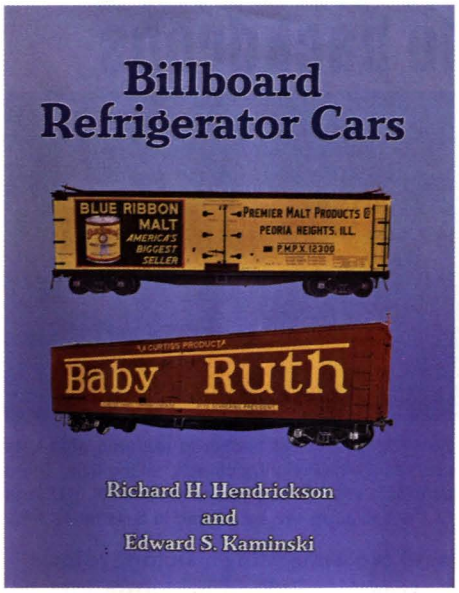

Railroad historians Edward Kaminski and Richard Hendrickson have written an outstanding book covering the famous "billboard" reefers of the 20s and 30s. It's a must-have reference for anyone interested in these colorful cars.

FOR a number of years now, many model railroaders have been fascinated by the often ornate décor and bold product advertisements once worn on the sides of wooden refrigerator cars, which appeared on our rails for a relatively short period of time during the 1920s and 1930s. O gaugers in particular have been treated to some very nice reproductions of these billboard reefers through the efforts of Atlas O, which has just about singlehandedly created a new niche collector market over the past decade with their numerous 1/48-scale wood refrigerator car offerings. However, what has been lacking for the hobby as a whole up until now is a good historical perspective of the prototype cars explaining how they came into use, who exactly operated these reefers, and what brought about their downfall. That's where well-known railfan publisher Signature Press comes into the picture with their recent book release entitled *Billboard Refrigerator Cars* by noted rail car historians Edward Kaminski and Richard Hendrickson. Thanks to these two companies, O gauge modelers (as well as others) can truly start enjoying the colorful world of billboard reefers.

Through the Eyes of the Rail Historians

According to authors Hendrickson and Kaminski, no one knows for sure who pioneered the idea of advertising products on the sides of freight cars, but the practice appears to date back to the late 1800s with both meat packers and breweries the first to really embrace the idea. With the railroads being the only true mode of mass transportation at the time, the coming and goings of the train in and out of communities was a common sight. The business entrepreneurs in the industry thought to take advantage of this reality and, combined with the fact that the reefers were dedicated to the service of one shipper, set up leasing companies offering free car side advertising among other benefits for their patronage. By the end of the First World War, shippers of perishable goods such as fruit, vegetables, eggs, and dairy also began the practice of decorating either company-owned or leased reefers with their assorted brand names and slogans.

The 1920s through the decade of the Great Depression would prove to be the heyday of the colorful reefer, but with their newfound popularity came objections of unfair competition by the railroads, who were obligated to transport these rolling billboards to wherever the shipper demanded. While the management of the railroads were irritated by the free advertising shippers were receiving from leasing companies and the car routings demanded by the shippers in order to get as much advertising exposure as possible, the mileage usage kickbacks to shippers was a much bigger issue. At this time, all customers of a railroad were charged the same freight tariffs for moving their goods whether they used private cars or the railroad's own rolling stock. However, private car owners received rebates from the carrier based on the total mileage the reefer traveled to offset the use of their cars. Car leasing companies soon discovered they could offer shippers some of the mileage payment money they were receiving from the railroads as another benefit of leasing out their cars. In some cases, these payments nearly equaled the cost of the lease. Meanwhile, the railroads were still required to maintain a fleet of reefers to meet the demands of shippers during peak times and were not allowed to load the private cars with lading on return trips to the shipper, adding to their financial loss in this arrangement.

Unable to come to terms with the car leasing companies, the railroads appealed to the Interstate Commerce Commission for a resolution to this dispute with the end result being the ICC ruling in favor of the railroads in July of 1934. Basically, the decision stated that owners of the refrigerator cars could not offer lessees payment from mileage earnings, that the railroads were entitled to backhaul cargo when private cars were en route home, and that advertisements of shippers were prohibited on newly constructed or repainted reefers effective immediately and within four years car side advertising would be banned completely from interchange or local use on any railroad.

So, by 1938, the often elaborate and gaudy billboard reefers that had colored so many train consists for over two decades would become only a memory for the railfan to ponder. However, luckily for us, a few of these cars were captured on film and the authors have done a

Another meat packer that leased reefers from North American Car Company (NACC) was the Nuckolls Packing Company of Pueblo, CO, whose cars ran under NPXX reporting marks. NPXX 115 was built in July 1925 and painted for Nuckolls at Blue Island in April 1935. This photo from the Tim Moses Collection can be found on page 58 of Billboard Refrigerator Cars.

Northern Refrigerator Car Company (NRC) leased many refrigerator cars to small Wisconsin canning companies. All of the cars were the NRC's early 1920s Pullman-built 40-foot, 40 ton reefers with Vulcan trucks. This photo from page 102 is part of the Lyn Leighten Collection and shows NRC 3630 which was assigned in September 1934 to the Glenbeulah Canning Company of Glenbeulah, Wisconsin — packers of "Devotion" brand fancy peas.

great job of collecting and presenting images of these reefers in an organized fashion. The quality bound, 222 glossy page, 8-1/2 x 11-inch hardbound book presents the billboard reefer in 443 black and white and 21 color photographs that average two or three large photos to a page. Each photo is accompanied by a detail rich caption offering all the particulars of the prototype including date and location of the subject when possible.

Billboard Refrigerator Cars consists of twelve chapters broken down into three main sections. The first few chapters present the historical background of the reefer including the economics behind their operations, as I touched upon briefly above, followed by a photo essay on the earliest refrigerator cars and their emergence on the railroads along with the predominate role the meat reefers played in the billboard advertising arena through the 1930s.

Chapters four through ten then supply the reader with a wealth of black and white images portraying examples of the many refrigerator leasing companies of the era: North American Despatch, North Western Refrigerator, Western Refrigerator Lines, Merchants Despatch Transportation Company, Northern Refrigerator Car Company, General American Refrigerator Express, Union Refrigerator Transit Lines, Quaker City Refrigerator Express, and a host of other smaller leasing companies. Each of these photographic collections is introduced with a brief company history.

Our photo journey concludes with a look at the aftermath of the ICC ruling and its affect on the reefers' appearance in the ensuing years. This includes a brief look, in color, at the post World War Two renaissance of the billboard reefer when a growing number of refrigerator cars began appearing again with shippers' multi-colored company emblems on their car sides, although they still lacked the product names and slogans of those glory years.

Besides including a bibliography and full index, the book contains two appendices that add to the understanding of the billboard reefer era. The first appendix provides some indication of just how colorful the billboard reefers really were (remember the age of the billboard reefer was gone before wide use of color film) through the color reproduction of 34 car sides originally depicted in model railroad manufacturer M. Dale Newton's Red Ball catalog from the 1940s and 1950s. Mr. Newton produced HO-scale billboard reefer kits starting in the late 1930s and his renderings, despite the printing limitations of the day, are thought to be good indications of the colors used on these prototypes.

Appendix 2 provides a summary of the ICC ruling as reported in the July 1934 issue of *Railway Age* magazine. It's much easier to follow the synopsis of the original multi-page report and provides additional insight into the demise of the billboard reefer.

A Modeler's Perspective

I must admit that I was embarrassingly ignorant of the real history behind the billboard reefer era before reading this book. While a number of Atlas O's beautifully modeled O-scale 36- and 40-foot wood refrigerator cars have crossed this reviewer's desk over the years, I had no idea of how they truly fit into the bigger picture of the U.S. railroad experience nor the amount of research,

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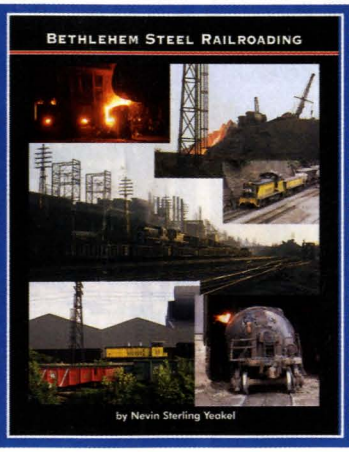

Features 70 photos (37 color and 33 b/w). Many of these are seldom seen views taken inside the plant. PB&NE, LV, RDG, D&H, CR, BSCO Narrow Gauge and other private Bethlehem Steel equipment are shown, including hot metal cars, cinder pots and heavy-duty flatcars with loads. 8 maps, plus charts listing tracks, crew assignments and interchanges.
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This brightly colored Nuckolls Packing Company car from Atlas O will certainly stand out in any O-gauge consist. Our 2-rail sample is based on the 36-foot wood refrigerator cars that were the mainstay in the meatpacking industry during the steam era. Built by the General American Car Company for the Cudahy Packing Co. in 1925, this O-scale 36-foot wood reefer is representative of the thousands of cars that transported meat, dairy, beer, and food products well into the 1960s. Additional roadnames being offered include A.R. Loomis, Dubuque and a special Milwaukee Brew 2-Pack featuring Old Heidelberg and Schlitz beer cars. Dave Otte photo.

Here we have Atlas O's interpretation of the Glenbeulah Canning Company car. Our 3-rail sample is based on the 40-foot wood refrigerator cars built by Pullman for NRC in 1930. With its opening rooftop ice hatches, diecast metal USRA-style fish-belly underframe and separately applied vertical brake shaft, it is representative of the thousands of similar cars that were built during the billboard era of American railroads. The latest release of this O-scale model also includes cars decorated for Karlsbrau Beer, Ladoga Canning Co., Plochman & Harrison, and Schmidt's. Dave Otte photo.

using both railfan photos collections and corporate histories, was required by the O-gauge manufacturer to render all the paint schemes to date: several of which are found in this excellent volume.

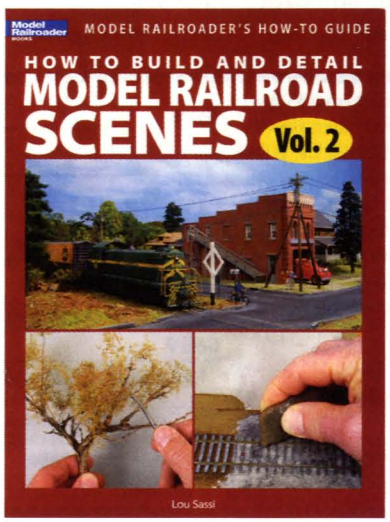
Billboard Refrigerator Cars was an enjoyable and fascinating read from start to finish. I was particularly impressed with the authors' book recommendations for additional reading, casually included in the text, offering the reader on the spot resources when their interest is piqued the most. Photo reproduction for the most part was very good and the advertising artwork on the car sides was clearly shown, although some of the underbody details on the reefers were too dark to make out. Of course, one needs to keep in mind that the billboard reefers only numbered a few thousand at most at their climax and photographs of these cars, especially while in a consist, are a challenge to find; the authors are certainly to be applauded for their efforts.

I'll definitely be adding this book to my library soon, but it hasn't quite made it to the shelf yet. I still find it at the top of the stack of the other railfan books on my reading table having continually gone back to the photos and text as a reference while reflecting on my collection of Atlas O reefers.

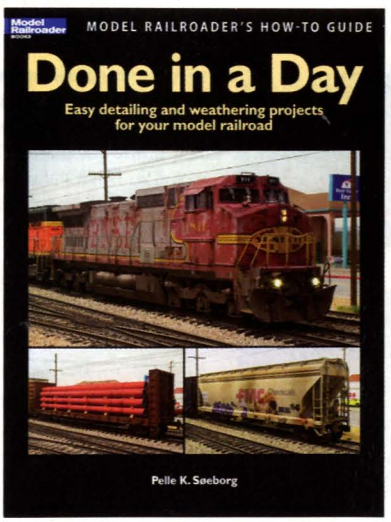
Three New Titles from Model Railroader Books

BOOKS — Kalmbach Publishing, publishers of *Model Railroader* Magazine, has added three new titles to its library of modeling books: *How to Build and Detail Model Railroad Scenes, Vol. 2*, *Done in a Day Easy Detailing and Weathering Projects for Your Model Railroad*, and *Shelf Layouts for Model Railroaders*. The books are now available at your favorite hobby book reseller.

In *How to Build and Detail Model Railroad Scenes, Vol. 2*, *Model Railroader* contributing writer Lou Sassi walks readers through a variety of new settings such as a firehouse scene, residential neighborhood, and farm implement dealership, and shows how to model each realistically. The 80-page softbound book retails for $19.95.



Done in a Day Easy Detailing and Weathering Projects for Your Model Railroad takes readers through more than a dozen simple detailing weathering projects for rolling stock and locomotives. Author Pelle K. Søeborg shows how to turn a shiny boxcar into an old freight hauler, graffiti a hopper, weather a tank car with spills, rust old auto carrier roofs, and make easy coal and pipe loads, among other projects. The 88-page softbound book retails for $19.95.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In *Shelf Layouts for Model Railroaders*, author and avid modeler Iain Rice teaches modelers how to set up a model railroad using track-shelf systems, solve sight-line and lighting problems, plan realistic operations for your shelf layout, build train cassettes to avoid storage and staging issues, and how to work around doors, windows, and corners. The 88-page softbound book retails for $19.95.

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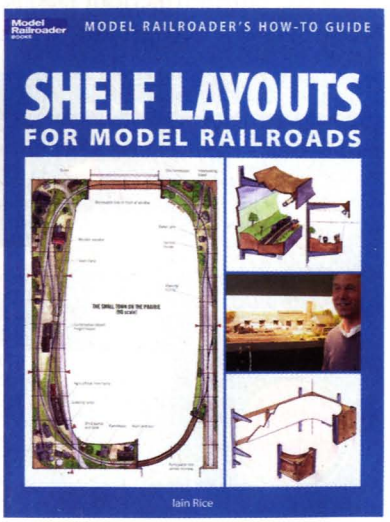

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REVIEW HO

Woodland Scenics' New Drive 'n Dine is Made for Cruisin'

Review and Photos by Bill Cawthon

Drive 'n Dine, HO Scale (BR5029),
MSRP: $89.95
Footprint: 7.75 inches by 5.625 inches

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ONE of the legendary landmarks of the 1950s and 1960s was the drive-in restaurant. Although drive-ins and walk-ups with parking lots were around well before World War II, it was in the post-war era that they became more than a place to grab a quick bite to eat and evolved into a place for young folks to gather and while away an afternoon or evening. They were also popular with young families, giving Mom a night out while not having to worry about unruly children causing problems.

The Drive 'n Dine

Woodland Scenics has made it easy for you to add one of these American icons to your HO layout. The Drive 'n Dine is one of the latest additions to the company's line of Built-&-Ready structures and it's a real gem.

Like all the Built-&-Ready models, the Drive 'n Dine comes complete with the assembled structure, figures, signage, and an assortment of details. There's even a vintage 1950 Ford convertible, complete with driver. There are trash cans, planters, a soda pop crate that's missing a few bottles, a propane tank for the stoves, and the electric service box ready for connection to an overhead power line.

Everything is nicely painted and there are lots of printed accents that really bring the little drive-in to life.

Even without the car, one of the spotting features that puts the Drive 'n Dine in the post-WWII period is the soft-serve cone perched on the roof. Some say John Fremont McCullogh, the founder of Dairy Queen, and his son Alex created the frozen treat in 1938. Other sources attribute the development to a British research team that included a young Margaret Thatcher, who would go on to become prime minister, working for J. Lyons & Co. a large catering, food manufacturing, and distribution business. Whichever is true; the real growth in soft-serve came in the years following World War II. Competitors like Tastee Freez began appearing in the early 1950s and soon could be found almost everywhere. The reason is simple: soft-serve, which uses many of the same ingredients as ice cream, has a couple of business advantages over real ice cream. First, it costs less because a lot of it is air (up to 40 percent) and, second, a machine can dispense it faster than a soda jerk with his scoop can dish up the real thing. When your primary clientele is teens with relatively little money (we're talking the old days, now), it's important to have food they can afford and margins that allow you to stay in business.

Speaking of food costs, the 15-cent burger price can work for a long period of time. When the first McDonald's burger was sold in 1955, it was 15 cents. In 1964, it was still 15 cents. But that was McDonald's. In retrospect, 15 cents seems a bit pricey for a basic burger in the 1950s. I remember a dime or twelve cents in my hometown. But, maybe the burgers at the Drive 'n Dine are special and worth the extra pennies. After all, the sign says they're "world-famous."

On the other hand, that nickel coke

The Drive 'n Dine drive-in is one of the newest of Woodland Scenics' Built-&-Ready structures. It comes ready to add to your layout with all figures, details, and signage in place. Add a few more figures and vehicles to make a complete cruisin' scene from the Fabulous Fifties or early Sixties.

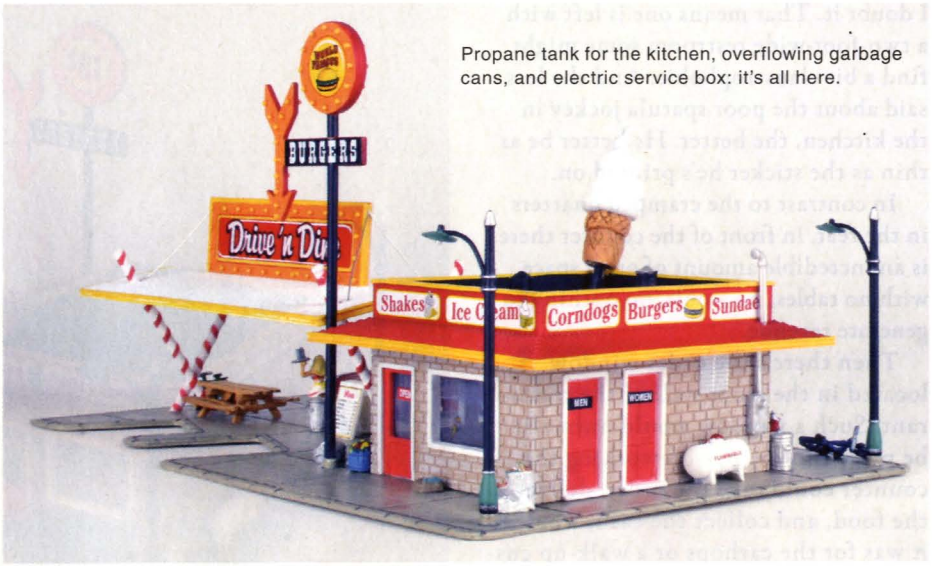
on the menu had gone the way of the tailfin by the 1960s. The soda was now at least a dime and, as is still true today, the cup was the most expensive part.

If a customer doesn't want to sit in their car or is too young to drive, the Drive 'n Dine has a picnic table under the awning as well as few stools for counter service. By the number of bicycles parked or scattered around the place, I would expect the counter or table to be full, so you might want to think about adding some figures. I believe Woodland Scenics has some sets that might work.

In addition to the stools and counter mentioned above, the Drive 'n Dine has a well-detailed interior. The counter has condiment bottles and other typical items, as well as a plate and cup undoubtedly left by another happy customer. Behind the counter, a waitress stands ready to serve the next patron.

On the back wall, a decal or sticker shows the short-order cook at work at his grill, a menu, and a door. All in all, Woodland Scenics has really gone the extra mile with this model.

With all the interior detail, you'll be happy to know Woodland Scenics has added lighting. Pre-stripped wires come out of the base, ready to connect to your accessory power supply.



Propane tank for the kitchen, overflowing garbage cans, and electric service box: it's all here.

The footprint of the structure, including sidewalks, is 7.75 inches by 5.625 inches, but you'll need to add some space around it to allow for cars to enter the parking spaces. To be a real "cruising" drive-in, I'd allow about 2.75 inches, or roughly 20 scale feet, on each side and at the rear to allow room for the hot rod parade. If that sounds like a lot you need to remember that the Ford that comes with the Drive 'n Dine was one of the shortest cars built in 1950. A 1950 Lincoln Cosmopolitan was almost two feet longer and a Buick Roadmaster was 20 inches longer. Plus American cars grew in the 1950s: by 1957 the base Ford was nearly 14 inches longer than its 1950 predecessor.

There was one thing that bothered me about the Drive 'n Dine. Since the lighting is such a nice bonus, I hate to complain about it, but Woodland Scenics used an incandescent bulb secured to the ceiling and then glued the roof down, making replacement dodgy at best. I wish they had either left some sort of access or used an LED that has a much longer lifespan than most incandescent bulbs.

This 1950 Ford convertible with its generic grille and driver is included with the building. With a sweet ride like this, I am a little surprised the guy doesn't have a date.

If the car isn't enough, you can tell it's the 50s by the prices on the menu, although I think some of the prices are a bit optimistic even for those days.

Minor Quibbles

The following quibbles have absolutely no bearing whatsoever on the quality of the model and certainly wouldn't stop me from buying it, but I do need to point them out.

Somewhere deep in my checkered past, I managed a couple of fast-food restaurants and I have some familiarity with kitchens in such establishments. The interior layout of the Drive 'n Dine is all wrong. From the wall behind the counter to the back of the restaurant is about two feet. In that space, there supposedly is a kitchen with a grill, deep fryer, cooler, pantry, some sort of scullery and room for a cook to use them. There are also the men's and women's restrooms. Now, it may be the owners of the Drive 'n Dine are advanced beings that have mastered time and space and upon entering the door you're transported to a commodious facility orbiting Proxima Centauri but

I doubt it. That means one is left with a two-foot-wide restroom some might find a bit claustrophobic. And the less said about the poor spatula jockey in the kitchen, the better. He better be as thin as the sticker he's printed on.

In contrast to the cramped quarters in the rear, in front of the counter there is an incredible amount of open space with no tables, no stools, no nothing to generate revenue.

Then there's the order window located in the front wall of the restaurant. Such a window would normally be placed so the person working the counter could take the order, deliver the food, and collect the cash, whether it was for the carhops or a walk-up customer wanting their order to go. The way it's situated on this model, there's no way for the counter person to work the window.

Woodland Scenics even provides interior lighting. Just drop the leads through the scenery base and connect to the accessory power supply.

Final Thoughts

'Nuff said. We look to the folks at Woodland Scenics for great model railroad products, not facilities planning, and on that basis, they have done an outstanding job with the Drive 'n Dine. You may want to add some weathering, but be sure to do a good job of masking the windows before using any spray fixatives; it would be a shame to obscure all the great detail that has gone into this model. Check it out at your favorite hobby retailer.

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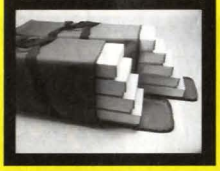

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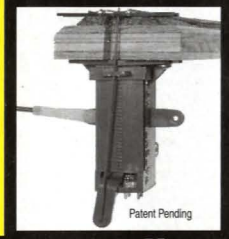

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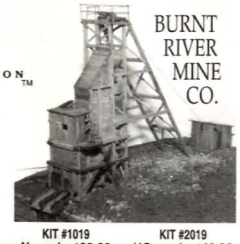
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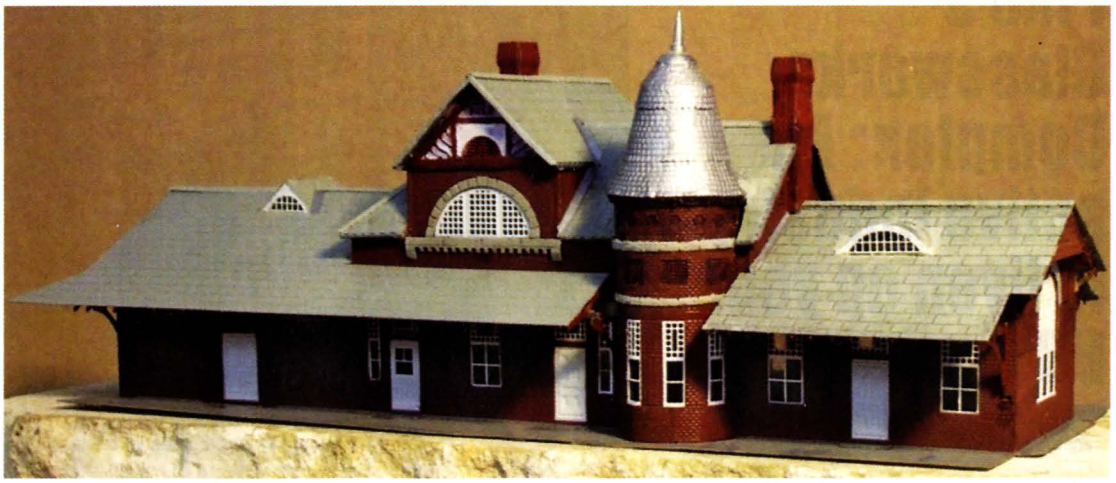
Micron's B&O Oakland station adds beauty to layouts

Z & N — Micron Art has released the1884 B&O Railroad, Oakland, MD Station kit. A complex structure, the kit is based on actual drawings and is licensed through the B&O Railroad Museum in Baltimore.

The station kit features five etched brass frets of details, cast finial and brass shapes, acetate printed stained glass windows for all penetrations, one silhouette dog, two standing figures inside the turret, one baggage cart with suitcases and trunks. Fully illustrated color instructions for a step-by-step construction is included. The kit is recommended for the experienced model builder. It is available for N-scale (#2091) for $189.95, and in Z-scale (#1091) for $139.95.

The B&O station is of Queen Anne style design. There are complex intersecting shingle roofs. The ornamental work is not ostentatious. The symmetry is dynamic and integrated. The building incorporates extensive brick bond work and bossage, giving life to the texture of this structure. The dome roof is a metal alloy shingle whereas the remaining roof shingles are composites. The turret and dome of the B & O Railroad Oakland Station combine to give this depot its distinctive signature. It was built in 1884 by architect E. F. Baldwin and is considered to be one of his finest depots. It was restored and refurbished in 1999-2000.



This depot was built in 1884 by architect E.F. Baldwin, and was restored and refurbished in 1999-2000. It is overseen by the Garrett County Historical Society in Oakland, Maryland; however, it will be taken over by the B&O Railroad Museum later this year.

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REVIEW HO

Piko's Glassworks Complex: An active industry to liven up your HO layout

The Piko HO-scale glass foundry makes an impressive industry for your layout (vehicles and figures shown are not included).

Review and Photos by V.S. Roseman

E. Strauss Glassworks Complex kits
Main building kit (#61116), MSRP: $72.99
Side Building kit (#61117), MSRP: $69.99
Factory Chimney kit (#61118), MSRP: $29.99
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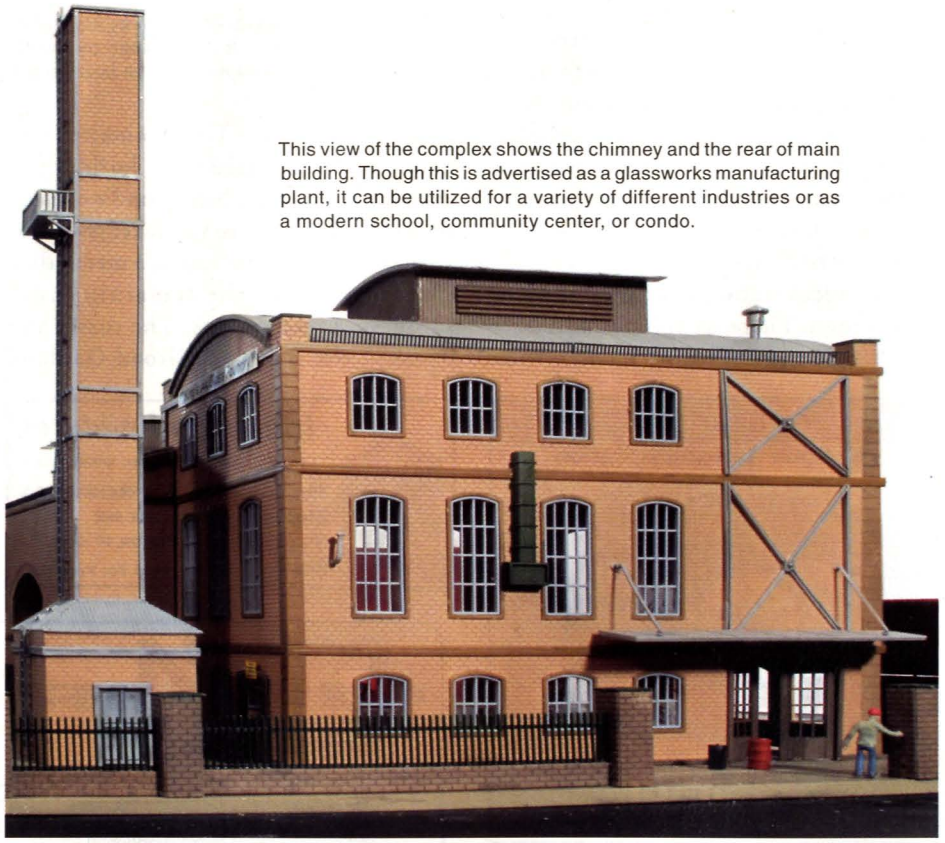


This view of the complex shows the chimney and the rear of main building. Though this is advertised as a glassworks manufacturing plant, it can be utilized for a variety of different industries or as a modern school, community center, or condo.

PIKO is a German manufacturer of N-scale, HO-scale, and large-scale products which are in turn distributed in the U.S. and Canada by Silvergate Distributors. You may be familiar with Piko's large-scale structures; they are popular for use on garden railroads.

A glassworks such as this complex might manufacture such items as coffee pots, laboratory flasks, fine crystal, or other glass items. The complex could also represent many other types of manufacturing facilities by just adding other signs. It could also be used as a modern school, community center, or as condos.

Piko's Glassworks Complex

This HO-scale factory complex is available as five separate kits. This permits the modeler to buy and assemble one section at a time, thus spreading out the cost. Each section of the complex is attractively boxed with accurate descriptions and color photos of the actual completed kit.

Kit 61116 is the main building and has a high ceiling on the second floor to accommodate large machinery. The building could also be used alone if desired. The doors are all double wooden doors that have simple hinges so that they are movable. The model is molded in several colors that do not need painting. A larger glass foundry could be built by adding an additional main building. Above each floor is a decorative string course (a horizontal layer in a building, commonly of brick or stone) that forms a rectangle, making aligning the wall sections much easier. This kit and the 61117 side building have barrel-vaulted roofs. For anyone preferring a flat roof, it is possible to leave off the curved roof panels and vault ends, and replace them with plain sheets of styrene (not included in these kits). The large roof vent could be adapted to a flat roof by the modeler. Roofs of this type in the U.S. are often covered with black roofing materials.

Kit 61117 is the side building that has

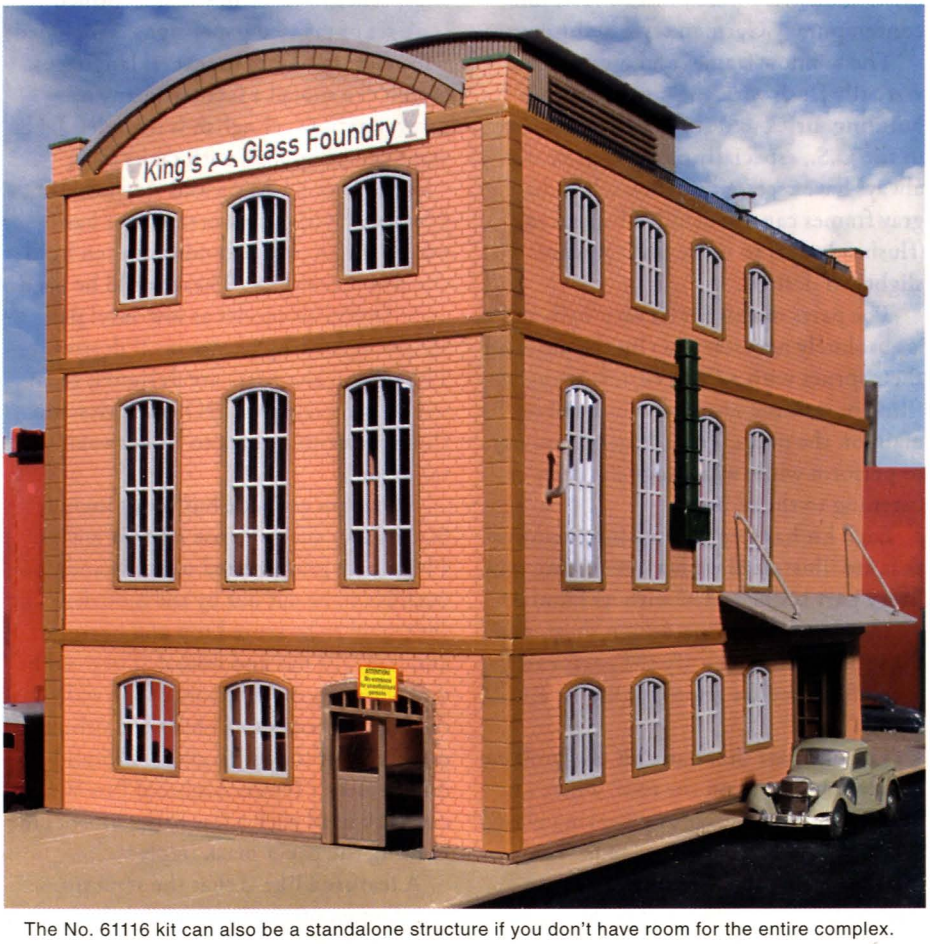
additional manufacturing space. The side building is not intended to be used by itself, for it only has three walls. Although intended to stand as an "L" formation with the main building, these two buildings could also be placed parallel to each other in a stepped arrangement. The roof of the side building would intersect some of the windows on the end of the main building, and the modeler could fill in the window areas with styrene (not included in this kit) and paint to match the color of the façade.

Kit 61118 is the chimney, which has a square smokestack. This makes an interesting variation to the common round chimneys in most model kits. This unit has a small boiler house at its base. The chimney could be placed anywhere around the main or side buildings. The chimney kit can be used with any type of older factory structure, and for a more impressive installation, two or more could be arranged side by side.

Kit 61119, Factory Accessory kit, could be used in any factory, or could be useful in a warehouse, junkyard, or other industrial application. A number of small details are included: There is an overhead crane, red fire barrels, two fire extinguishers, garbage cans, a crate, and standard and small chemical drums. Several vessels are also provided, probably for molten glass. In addition there is a loading skid, hand truck, small wheelbarrow, plus a sprue that holds several hand tools and more similar details. The parts come molded in yellow, red, green, and black plastic. Painting the crate tan, the garbage cans silver, and the fittings of the compressor and gas tanks with black piping, for example, would improve their appearance greatly.

Kit 61120 is Factory Fences. This contains 2.5 meters (98 inches) of fence. The fence sits on a low brick wall that is to fit between brick posts. This can be set up wherever the modeler wishes. Several gate pieces are included and may be glued in open or closed positions. This kit could be used around most any type of town or city structure.

Side view of the complete glass foundry complex. The textured wall surfaces mean that painting isn't required, though a bit of weathering would add to the building's overall appearance.



The No. 61116 kit can also be a standalone structure if you don't have room for the entire complex.

Putting It All Together

Piko has produced these kits from special molds that have etched textured surfaces that make painting optional, as the surface of the styrene parts is much less waxy-looking than ordinary kits. Additionally, most parts have been pre-weathered, having been dipped in a solution of very dilute black pigment that provides a realistic effect. This is a very subtle effect and in most cases just highlights the details of the parts.

Each window has brown stone trim around it, which fits into the façade molding to hold the window frame in place.

All of this makes a very convincing German-prototype factory complex, but over the years, German-educated architects and civil engineers have settled in the United States, and have introduced German architectural styles here. In

This view of the No. 61117 side building kit shows that it has only three exterior walls. The cutout area is designed to fit around the end of kit No. 61116.

The factory accessory kit includes an assortment of details such as a crane, molten glass vessels, and two containers with opening rear doors. This particular kit could be used to add details to places other than the glasswork complex.

many towns, the local breweries and other industries were built to resemble contemporary German style architecture.

The window frames and muntins are virtually flush with the outside of the building. Brick and stone structures here in the U.S., especially older ones, nearly always have recessed windows, but the gray frames can be installed backwards (flush side out) to move these inwards slightly if desired.

The parts of this kit fit very well, and it is absolutely necessary to clip the parts off their sprues with a flush cutter. I suggest filing or sanding any stubs that still remain on the parts. This is a good activity to perform while watching television or listening to the radio.

Each kit has step-by-step instructions that are illustrated without requiring text. Every part is illustrated with its number on the front of the instruction sheet, making it possible to identify the parts easily even after they are removed from their sprues.

The one part that has a bit of a problem is the snow fences on the roof. These are made of a non-glueable engineering plastic and have several mounting studs. The instructions show how to trim certain studs off to fit in holes, but to get a good fit, additional studs must be removed. An alternative way to handle this problem is to cut off all the locating studs and set the snow gates against the lip on the top floor string course (the rectangular roof base) and tack in place using slow setting styrene glue (such as Faller Expert cement for plastic) or super glue. Then add a piece of Evergreen .060-inch x.060-inch strip inboard of the snow fence to clamp the snow fence in place in the slot formed.

A set of printed paper signs is included with factory names in several languages, so you can model a factory in any of several nations. (English is included.) The signs can be applied with tacky glue.

The main building and side building kits come with an assortment of base pieces which, when combined, can hold the whole complex. These could be used away from this model as low-level passenger or loading platforms if desired. The lips on the parts are designed to fit over most snap-type HO track ties and there are centerpieces to fit between the rails, too.

The main and side buildings include black paper sheets to use as light masks. These have gray printed window and door outlines to be cut out by the modeler. The sheets are to be scored top and bottom and then cut out and folded. They can be tack-glued to the interiors of the walls easily. Rubber cement can be used, although I prefer any of the tacky glues, or liquid styrene cement (Tenax, Ambroid Pro-Weld) could be used with a few little dots of glue holding the paper mask in place.

A feature I like is that the structures are all open on the bottom and the models can be modified or added to later with no problem. For example, lights (not included) could be strung with bulbs in different locations of the interior — window shades could be added or frosted plastic placed behind some of the windows.

Arranging the base panels supplied in the main and side building kits to accept a train track makes this complex very useful on your model railroad as an active industry. Track can branch off your mainline and run into the complex to the loading areas in the yard and under the side building arch. While it could be fitted with a bumper, it would be far more useful if the siding track is extended out the other side of the model to a yard with two or three tracks. In this way, loaded cars could be pushed by your yard engine or a dedicated industrial switcher into the yard so more cars could be loaded or unloaded. Then the engine could pull several cars at a time out to the mainline for inclusion on your local freight train. Many operating possibilities exist for this interesting model.

This kit is made up of modular parts that also appear in some of the other Piko structures, and other arrangements of parts in the kits are possible.

Final Thoughts

Only basic plastic model building skills are needed to build this complex, but it does take time. The instructions are accurate and show the assemblies well. There are no difficult parts to the assembly, except for the snow fences, but the parts do need to be cut from the sprues carefully.

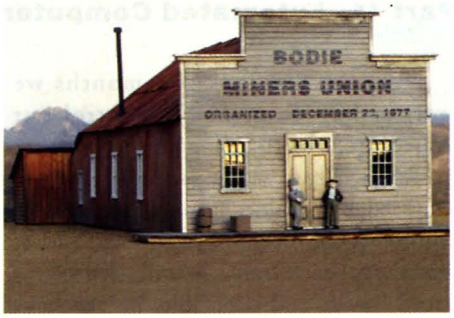
Piko's method of cutting precision molds with textured wall surfaces raises the level of realism from the usual appearance of unpainted plastic models, and makes painting of the walls unnecessary unless the modeler wishes to change the color or add weathering. The addition of a few figures and vehicles, and of course, an active train track into the complex, would make this industry a focal point of your model railroad.

New Miners Union kit from BEST

HO — Bollinger Edgerly Scale Trains has released a new kit, the Bodie Miners Union Hall. The kit measures 5-1/4-inches by 13-1/4 -inches, or 14-1/2-inches including the sidewalk. The kit includes corrugated laser-cut wood for easy assembly, metal casting, metal roofing, copper flashing, and instructions. Miners Union Hall (#1052) retails for $114.95.

As the labor forces grew in the mining industry across America, miners were often treated poorly and considered an easily replaceable unskilled labor source. It didn't take long for labor unions to form to protect the interest and safety of the miners. The town of Bodie, California was no exception to this institution.

Bollinger Edgerly Scale Trains, 375 Bean Hill Rd, Belmont, NH 03220; 603-267-1818; E-mail: brian@besttrains.com; www.besttrains.com



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Project DCC - Integrating Operation and Automation
Part 11, Automated Computer Control

— By Phil Scandura

Over the previous two months we learned how to manually control our Project DCC layout using various software packages. This month we build on that knowledge to explore automated computer control. By defining origin and destination stations for each train, their desired routes, speed limits, and timetable, we can have the computer pilot each train, performing conflict avoidance by routing around other trains.

Panel Pro

Panel Pro represents a Centralized Traffic Control (CTC) dispatcher paradigm, allowing you to control turnouts, routes, etc. in much the same way a prototype dispatcher would. It does not, however, provide the ability to automatically control layout operation. As noted on their web site, Panel Pro isn't as powerful as other layout management packages on the market (such as those used in Project DCC), and was never intended to compete directly with them. Instead, you can use the JMRI interfaces to write programs for your layouts, creating custom automation software. Of course this approach isn't for everyone, but for those with the interest and talent to do so, the results can be very satisfying.

Layout Commander

As discussed last month, once you've created the layout diagram and defined the locomotives that will be operated on the layout, you can use Layout Commander's virtual throttles to manually operate your trains.

In order to automate train movement, Layout Commander provides "manual-auto" mode. To use it you must first tell Layout Commander where each train is located on the layout. Using the mouse, you drag the train image to its respective block on the layout graphic. After doing this for all trains, you can instruct Layout Commander where to send a train using the "drag and drop" feature. Essentially click on the current position of the train and drag it to the desired destination on the screen. Layout Commander then highlights the available route based on occupancy detection (as shown in **Figure 1**),

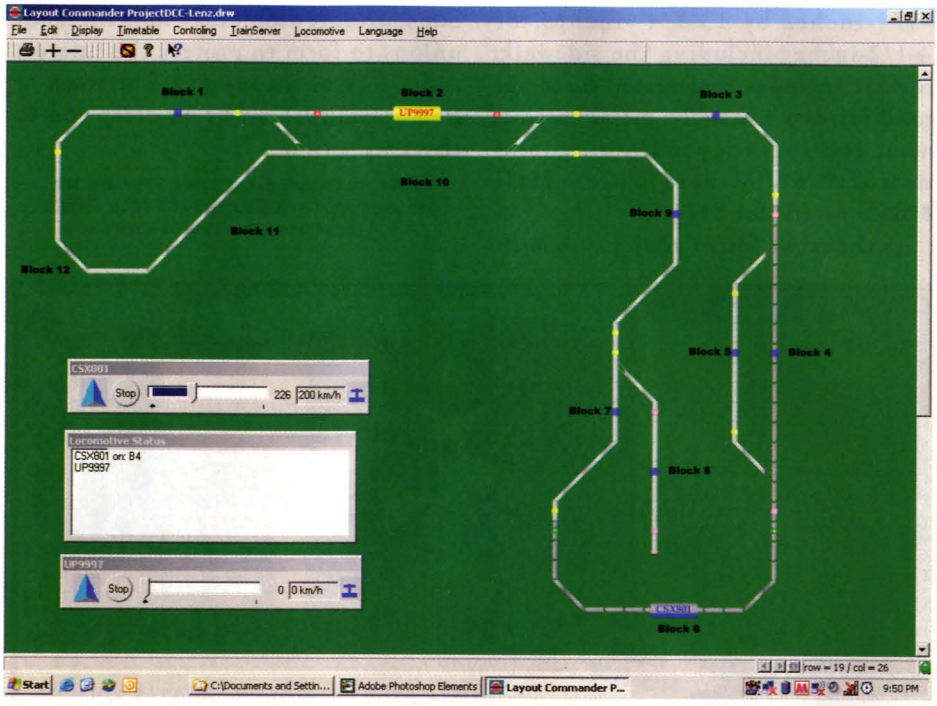

Figure 1 - Layout Commander provides automated train movement using "manual-auto" mode. Using the mouse, simply "drag and drop" the train from its current position to the desired destination. Layout Commander then highlights the available route based on occupancy detection (shown here as a dotted line), aligns the necessary turnouts and puts the train into motion. Once it reaches the destination, the train is stopped. In this example, CSX801 is currently moving from Block 4 to Block 6 under control of Layout Commander.

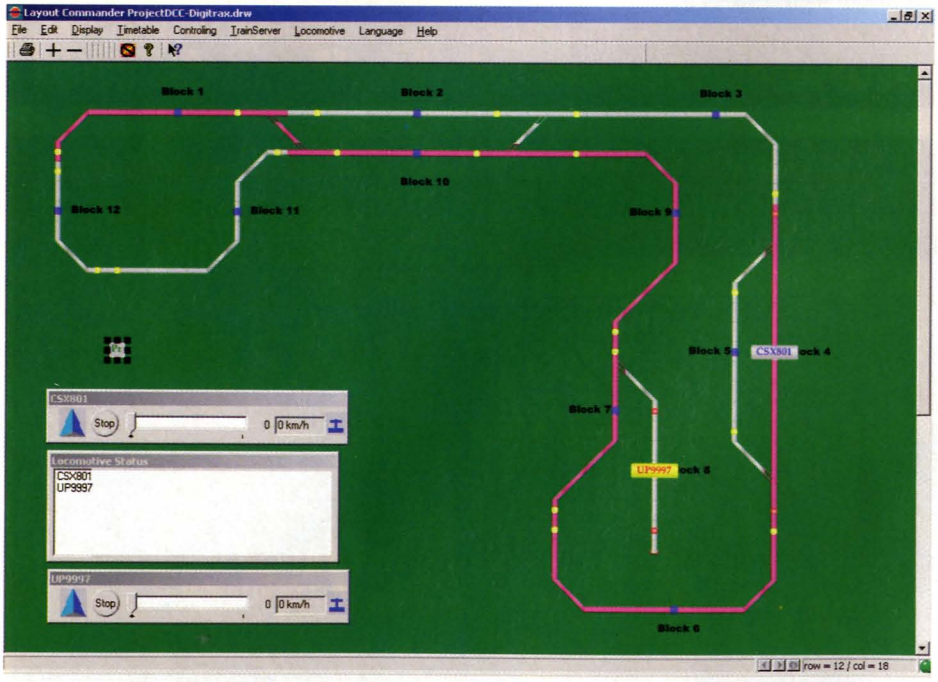

Figure 2 - Layout Commander supports automatic routes, which consist of a start and end block, including the desired blocks to traverse in between them. Clicking on the route button highlights the route. Shown here is the route between Block 4 and Block 1 that train CSX801 is about to travel. To activate the route and put the train in motion all you do is "drag and drop" the train onto the route button. As the train travels the route the current and next blocks are highlighted. Turnouts are thrown as the train approaches them, rather than when the route is first activated.

aligns the necessary turnouts, and puts the train into motion. Once it reaches the destination block, the train is stopped.

KAM refers to this feature as manual-auto mode because the process is started manually and then the software takes over the automation. Generally speaking it works quite well, although sometimes the routing it chose was somewhat counter-intuitive. For example, on occasion it decided to back the train around the layout to get to the destination. Eventually, I stumbled upon the "reverse initial direction" option in the locomotive settings, which corrected the problem. With practice I was able to get manual-auto to work fairly well.

Layout Commander also supports the ability to define automatic routes, consisting of a start and end point, including the desired blocks to traverse in between them (**Figure 2**). Routes can be combined with timetable support allowing you to run the layout under automatic train operation based on timed events (**Figure 3**). Layout Commander can operate multiple trains in both manual-auto automatic route modes.

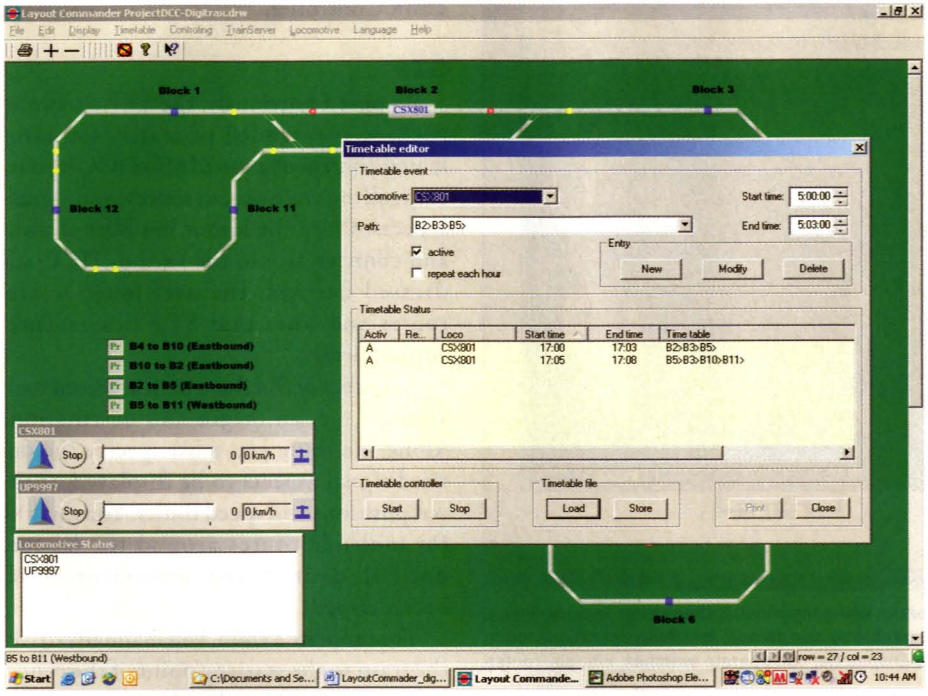

Figure 3 - By combining automatic routes with timetable support, the layout can be operated under automatic control based on Layout Commander's fast clock.

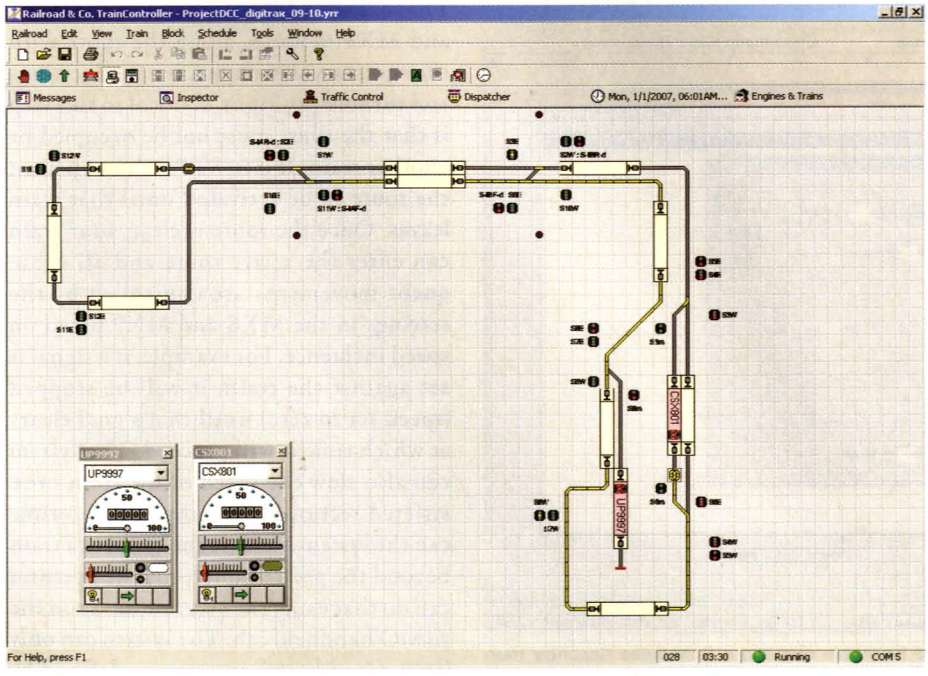

Figure 4 - Highlighted in yellow is the current active route, created by using the route wizard in Train Controller. Once the route has been created, simply click on the route icon to activate it, setting all turnouts and signals along the way.

Train Controller

Train Controller provides various methods of operating your trains under computer control. The first is AutoTrain mode, which supports a drag-and-drop method of operating trains around the layout, very similar to Layout Commander's manual-auto previously described.

Train Controller also supports both manual and automatic routes. When activated, a manual route sets all turnouts and signals to their predefined states and locks them until the train has completed the route and it has been deactivated. Manual routes permit the user to directly control their train with the throttle. Automatic routes, on the other hand, are under control of the computer using Train Controller's Visual Dispatcher feature.

Visual Dispatcher makes large-scale railroad operations manageable for one person, matching operations found on the largest club layouts. Like a human operator Visual Dispatcher can operate switches, signals, routes, and trains. This is the heart of automatic operation in Train Controller.

Getting started with Visual Dispatcher can be thought of in three main steps:

- First, divide your layout into blocks and enter these blocks into Train Controller creating the main block diagram, which represents a rough outline of the layout.
- Next, define manual and automatic routes.
- Finally, define schedules and optional timetables.

We've already performed the first step during our exploration of manual computer control (Part 10B). Creating routes is fairly straightforward using the route wizard shown in **Figure 4**. Simply insert a route icon in the beginning block and use the mouse to highlight the subsequent path around the layout. You can define as many routes as you wish, each specifying a different path around the layout.

Now that routes have been defined, all that remains is to translate the existing layout diagram into one that Visual Dispatcher can understand, and then define our schedules and timetables. The translation step is easy using the Dispatcher button on the toolbar. Pressing it opens a new window showing the Visual Dispatcher view of the layout (**Figure 5**), in which you can define schedules and timetables (**Figure 6**).

While only discussed briefly here, Train Controller provides numerous different options for schedules and timetables providing for very versatile operations. That having been said, you'll need to spend a considerable amount of time reading the user's manual, online help system, and experimenting before you get the hang of things. The Visual Dispatcher feature is without a doubt the most complex part of Train Controller.

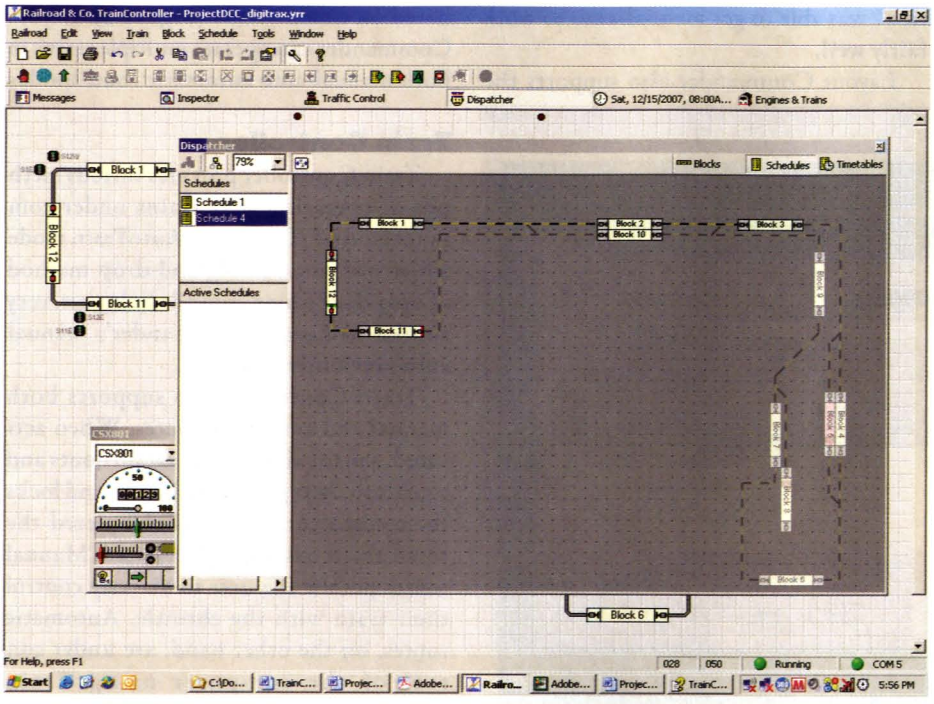

Figure 5 - Train Controller provides automatic route control using their Visual Dispatcher feature. Visual Dispatcher makes large-scale railroad operations manageable by one person, matching operations found on the largest club layouts. Like a human operator Visual Dispatcher can operate switches, signals, routes, and trains.

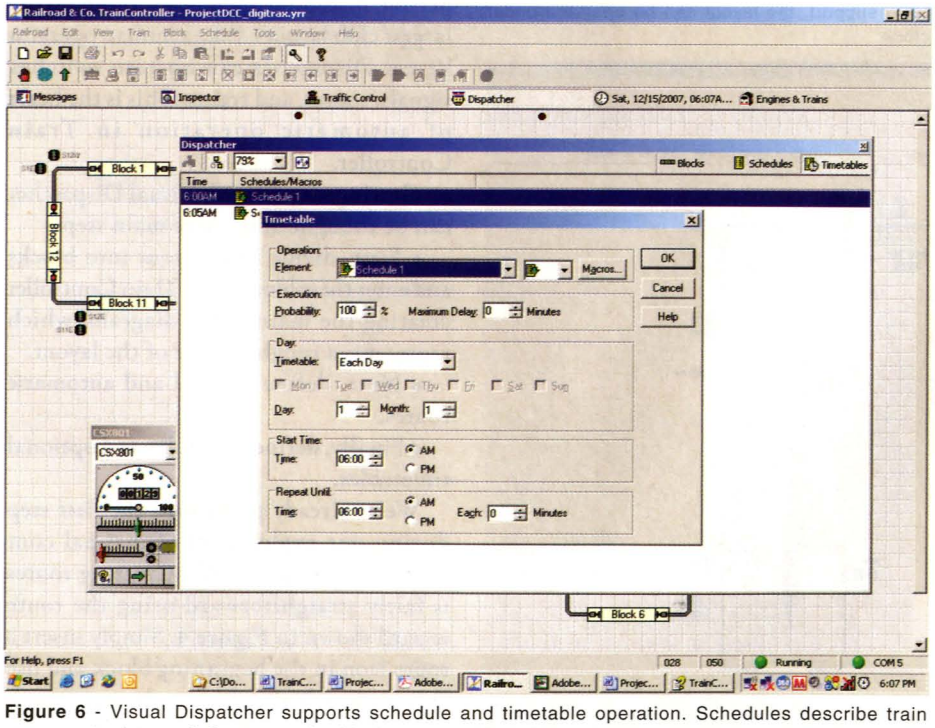

Figure 6 - Visual Dispatcher supports schedule and timetable operation. Schedules describe train movements of one train from a starting block to ending block. You can create as many schedules as desired, assigning them to any train you wish. This permits you to create only a few schedules yet achieve varied operation for many different trains.

STP

As noted previously, the STP software package is intended primarily for automated control of your ZIMO DCC layout, controlling train speed, routes, and signal aspects. Once the layout has been drawn and connectivity to the various DCC addressed defined, the user must create routes and lines that STP can execute automatically.

A route is defined as a path between two stations, i.e. an origin and destination. Along the route you must specify the desired signal aspects to be displayed, turnout positions and speed limits. You do this for multiple routes around the layout, until all desired train movements have been defined.

To automate a train, you manually drive the train to the starting point of the route, using the ZIMO handheld cab. Next, click on the desired route button to activate it. This causes STP to configure the MX8 and MX9 modules along the route with the necessary signal aspects, speed settings, and turnout positions. Critical to this step is that the route must not be occupied by another train. If it is, STP will not permit the route to be activated until that train leaves. Once the route is clear, your train can enter the active route and all subsequent movements are controlled by the settings in the MX8 and MX9 based on speed influence. For example, if a signal is set against the train, it will be stopped (speed set to zero) until that signal clears, at which time it will proceed. The system can also slow the speed of the train in restricted sections of the route. At no time can the system increase the speed of a train beyond the preset limit; only the operator can do that using the override mode on the ZIMO handheld cab. The system can only limit speed based on settings defined by the route.

While routes are restricted to single-

train operation, "lines" can support multiple-train operation. STP defines a line to be an uninterrupted stretch of track (no turnouts) between two stations. When traversing lines, signal aspects, and speed limits are controlled similar to routes.

One drawback noted was the inability to support the operation of the signals without needing to define a route or line. Simply put, it was desired to control signal aspects based on occupancy detection, a feature typically supported by other software packages. Doing so would permit the operation of non-ZIMO locomotives around the layout, triggering the proper signal aspects as they traveled. Of course the system would not be able to influence the speed of these locomotives, such as forcing a stop in front of a red signal, but it would at least illuminate the signals. Unfortunately STP does not support this capability.

Coming Next Month

Please join me next month as we bring the series to a close, reviewing the highs, lows, and lessons learned along the way. See you then!

Mentioned in this Article:

Panel Pro software (Version 1.8) MSRP: Free

JMRI Freeware
http://jmri.sourceforge.net/

Layout Commander software (Version 4.30.312); MSRP: $169.00

KAMIND Associates, Inc.
2373 NW 185th Ave., Suite 416 Hillsboro, OR 97124
503-291-1221
www.trainpriority.com

Train Controller software (Vers 5.8): MSRP: $349.00

Railroad & Company Software
Kreuzberg 16 B D-85658 Egmating / Germany
www.freiwald.com

STP layout software (Version 5.1); MSRP: $455.00

Dipl.-Ing. Ewald Sperrer
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www.stp-software.at (STP Manufacturer)
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Complete Train Control

Other Resources (Part 4)

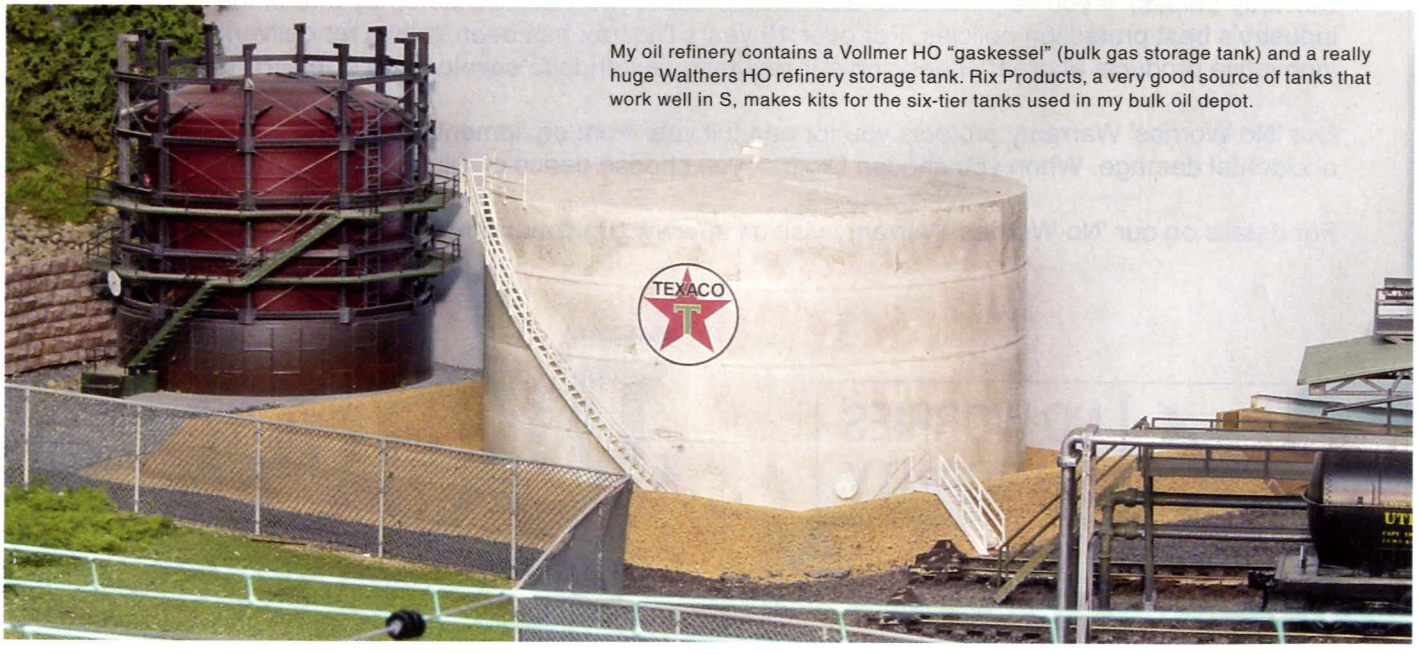
Correction: I made a serious error in the June 2009 "S Curves" column by misattributing the double-track plate girder bridge in one of my photos to Micro Engineering, whereas the bridge is actually a Central Valley Model Works kit. I apologize to the modelers who may have been misled, to Central Valley for diverting potential customers elsewhere, and to Micro Engineering, for whom I have caused extra work in the form of explanatory replies to confused customers.

The specific bridge shown in my June column was kitbashed from Central Valley's #1907 Double Track 72-foot through girder bridge. Micro Engineering sells single-track 36-foot S and Sn3 deck girder bridge kits (Catalog Nos. 75-505 and 75-506 respectively); these are quite different from the one shown in my column.

Central Valley Model Works, 1203 Pike Ln., Oceano, CA 93445, 805-489-8586 www.cvmw.com

Micro Engineering, 1120 Eagle Rd., Fenton, MO 63026; 800-462-6975; Fax: 636-349-1180

LEFT: Bob Christopherson used O-scale Design Preservation Models modules to construct this impressive Railway Express warehouse. Compare its size to the S-scale baggage car. 3-D signage is from Blair Line.



My oil refinery contains a Vollmer HO "gaskessel" (bulk gas storage tank) and a really huge Walthers HO refinery storage tank. Rix Products, a very good source of tanks that work well in S, makes kits for the six-tier tanks used in my bulk oil depot.

CURVES
FOR AND ABOUT S-GAUGE MODEL RAILROADING

A column by Dick Karnes

THIS MONTH concludes my series on "other-scale" equipment that's at home on S-scale layouts. This month we'll look at an O-scale structure source as well as a couple more HO items.

O for S

I have a couple of warehouses that Bob Christopherson built from O-scale **Design Preservation** modules. The Railway Express terminal shows one of these. Nothing special was done to these modules other than to provide S-scale doors and people.

A Tank is a Tank is a Tank

Model railroad industries are full of tanks of all sizes. I have tanks galore on my railroad. There are vertical tanks and horizontal tanks, tanks on towers, tanks on roofs, and tanks on the ground. I have a smattering of S-scale tanks, including a railroad water tank from a **Lehigh Valley Models** kit. But I have a lot more tanks that are marketed as HO models. **Rix Products**, a very good source of tanks that work well in S, makes the kits for the six-tier tanks in my bulk oil depot.

Both Korber and Rix make several varieties of tanks on truss towers that also work well in S. My oil refinery contains a Vollmer HO "gaskessel" (bulk gas storage tank) and a really huge Walthers HO refinery storage tank. These last two take up a lot of model railroad real estate. In S, they are appropriate examples of selective compression.

So the bottom line is this: Pay attention to what's available in other scales. You never know what might be just right to adapt to that problem area on your S-scale pike.

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Feel free to e-mail any comments or questions about S scale in general to scurves@modelrailroadnews.com or snail-mail them to S-Curves, Model Railroad News, P.O. Box 1080, Merlin, OR 97532-1080. Suggestions, contributions, and announcements are all welcome.

Mentioned in this column:

Design Preservation Models

Woodland Scenics
PO Box 98
Linn Creek, MO 65052
573-346-5555 Fax: 573-346-3768
www.woodlandscenics.com

—

Lehigh Valley Models
308 Indian Rock Dam Rd.
York, PA 17403
717-747-0493
kpbrick@aol.com

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Rix Products
3747 Hogue Rd. Evansville, IN 47712
812-426-1749
www.rixproducts.com/

—

Vollmer GmbH & Co. KG
Porschestraße 25
DE-70435 Stuttgart-Zuffenhausen Germany
http://vollmer-online.de/index.php

Orange Vista
Packing House
HO Kit #8407 – 17" x 4/1/2" foot print
20 detail items, 2 billboards,
mat board, wood, cast metal and plastic.
Alpine Division Scale Models, L.L.C.
P.O. Box 6, Artesia CA 90702
www.alpinemodels.com

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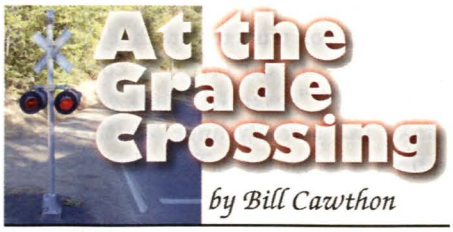
Sidewalk details finish the scene



A BUSY STREET scene means more than just vehicular traffic; it needs busy sidewalks to be complete. Depending on the locale and era, the sidewalk can actually be a fascinating place and pedestrians are only part of the scene.

I was again reminded of this with the release of some new sets from **Woodland Scenics**. Scenic Accents set No. A1941 includes some of the "furniture" common to sidewalks found in small towns and major metropoli (or metropolises, if you prefer). The set includes a phone booth, mailbox, parking meters, benches, trashcans, fireplugs, and manhole covers. They're all painted and ready to use. Also included is a figure Woodland Scenics calls a "meter maid" but that actually looks more like a woman checking her purse for change to feed the meter.

Depending on your particular Main Street, it might take a few of these sets to complete the entire scene. If you don't mind doing a bit of extra work, you can augment the contents of the Woodland Scenics set with some of the pewter castings from **Selley's Finishing Touches**. Selley's offers parking meters, trashcans, mailboxes, and other details.

The manhole covers in the Woodland Scenics set offer an opportunity for a nifty mini-scene. The other night, I was watching *Double Indemnity*, the 1944 movie starring Fred MacMurray in one of his few "bad guy" roles; in one of the opening scenes we get a shot of a utility work scene. All you see is a hole, a manhole cover, a couple of the old wooden sawhorse-style barricades and a few of the smudge pots that were used as warning devices back in the days before the flashing yellow lights to which we're now accustomed. The manhole covers are included in the Woodland Scenics set, the old-style barricades are available from Selley's, and the smudge pots could be fashioned from black beads of the appropriate size (about eight scale inches in diameter). Add a hole in the street and maybe a pickup truck and you're done. I don't know how late smudge pots were used as traffic warning devices, but I know it was at least through the end of the Transition Era. Woodland Scenics set No. A1826 includes a couple of figures perfect for this scene.

Whenever you have parking meters you are going to have parking tickets and people to write them. Figures of police officers writing tickets are available from a couple of sources and one of them could be combined with the lady from the Woodland Scenics set, desperately digging for coins before the cop finishes the citation.

The second of the new Scenic Accents sets is No. A1945 Wally's Weiner Wagon. While food vendors can still be found working the streets in many cities, Wally's moveable feast looks like it dates to an earlier era. Certainly his prices haven't been seen in many years; his menu lists a "loaded dog" with sauerkraut or chili and all the fixings for 15 cents. Add a nickel for a soda and you've got lunch for less than a quarter. Of course, you might have to give Wally a couple of cents for the bottle deposit if you take your drink with you.

It's well worth taking a moment or so to check out Wally's Weiner Wagon. It's so detailed all that's missing is the aromas. Condiment bottles, napkins, soda bottles in a crate, and other tools of the trade are present, as are the covers for the compartments where the red hots are

Mom and the kids take a tasty break at Wally's Weiner Wagon where a loaded frank with chili or sauerkraut is just 15 cents. The cart is well detailed with all the appropriate fixtures.

The Street Accessories set from Woodland Scenics includes everything shown here. The overflowing trashcan with a separate lid is a nice touch.

simmering and the buns are warming. There's a can hanging off one of the cart's handles that Woodland Scenics says is for ice cream.

In addition to the cart, figures representing Wally and some customers and a small sandwich-board-style menu are in the set.

Wally's Weiner Wagon will be a great addition to a street scene, a park, a carnival or even a train station. You can use different figures to vary the time period but it's hard to go wrong. Hot dogs were being sold from pushcarts in New York City not long after the end of the Civil War and a cart like Wally's might be a nostalgic touch in a modern setting.

I hope you'll check out the new Woodland Scenics sets at your favorite hobby retailer. I also hope you'll consider some other possibilities to jazz up your sidewalk scenes, because there are lots of them. Merchant displays are common in many cities and there are dozens of sidewalk businesses that can be modeled from newsstands to key shops to grifters with their shell and three-card monte games. As you look through the products available from various manufacturers, you'll find a variety of figures and accessories that will allow you to create almost any scene you can imagine.

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It's always good to hear from you and comments and corrections are always welcome. You can send an e-mail to: Gradecrossing@modelrailroadnews.com or snail-mail an actual letter to Grade Crossing, Model Railroad News, P.O. Box 1080, Merlin, OR 97532-1080.

Mentioned in this column:

A1826 City Workers, HO scale, MSRP: $11.99

A1941 Street Accessories, HO scale, MSRP: $18.99

A1945 Wally's Weiner Wagon, HO scale, MSRP: $18.99

Woodland Scenics
P.O. Box 98 Linn Creek, MO 65052
573-346-5555 Fax 573-346-3768
www.woodlandscenics.com

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113 Parking Meters, set of six, HO scale, MSRP: $3.50

230 Barricades, HO scale, MSRP: $3.50

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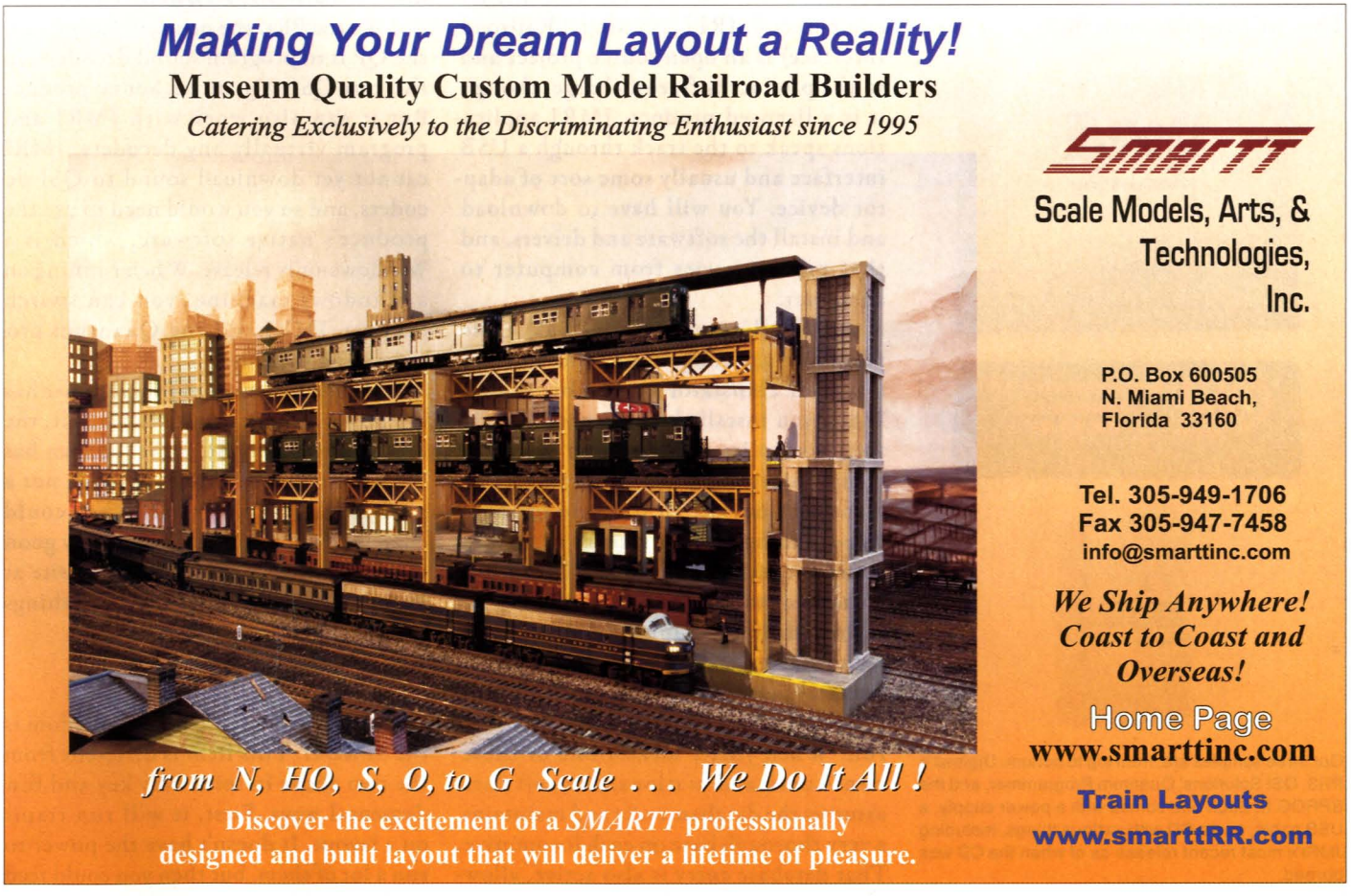
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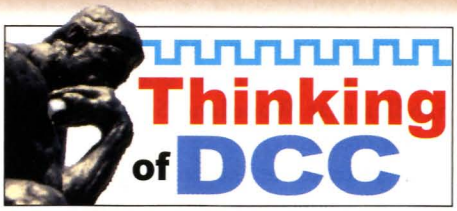


By John Sipple

THERE ARE a number of devices on the market that will allow you to use JMRI's Decoder Pro (and Panel Pro) without requiring you to have a DCC system. As the title suggests, it's even possible to work without a layout. Then comes the hard question: Why bother?

Let me give you three scenarios. In Situation One, you have a workbench where you labor on your locomotives, but it's in a separate location from the layout in your train room. You made a decision to separate the two so that the workbench wouldn't waste layout space. Now you can set up your laptop in the workbench area and have full access to the Internet, but even better, you can set up a program track where you can read and write to the decoders in each of your locomotives.

Situation Two takes place when you have a DCC system that doesn't offer a computer interface. You will need some other method to get in touch with your roster of locos, reading and writing CVs. This will require something that functions on its own, without needing the support of a DCC system.

Situation Three comes up when you have a simple test track on which you like to display and minimally run your locomotives. Lots of guys who are club members don't have a home layout, that being part of the reason they joined the club. Still, they'd like to do some work at home, and a six foot pine board would let you lay down a couple of lengths of flex track. Now you need some method of programming and doing some minimal running.

Guess what? There are actually several products on the market that support JMRI's Decoder Pro by acting as a USB intermediary between the computer and the track. Each one has its strengths and weaknesses, but all are worthy of consideration. First, let's understand the ground rules. JMRI's Decoder Pro is software that is written in the Java computer language and, as a result, can operate on Mac, Windows, and Linux computers. JMRI (Java Model Railroad Interface) is an open source project and so the product is free of charge, though it is a licensed product. JMRI applications speak to the track through a USB interface and usually some sort of adaptor device. You will have to download and install the software and drivers, and that process varies from computer to computer.

A USB (Universal Serial Bus) cable plugs into the computer on one end and a sort of translator on the other end. When you install the driver for this device it supplies the computer with the communications tools to speak to this translator device. In the case of these free-standing devices, it turns them into a sort of command station. What sort of command station becomes the issue.

In addition to running trains, a command station reads and writes decoders, operates switches, and usually maintains a very primitive database on locos it has run. When JMRI locates one of these mini-command stations, the software assumes the database tasks and maintains a very thorough base on each locomotive. That database entry is also active, allowing it to read and write directly to the loco and save the results.

Our three samples are, from top to bottom: Digitrax's PR3, QSI Solutions' Quantum Programmer, and the SPROG II. Each one comes with a power supply, a USB cable, and a CD with various things, including JMRI's most recent release as of when the CD was burned.

Digitrax PR3

Along with the MS100 and the PR2, this Digitrax product is designed to be an interface to the computer. Since the PR3 is the newest and best-developed member of this line, it supports USB 2.0, providing the fastest and most reliable connection. It can be tied into a LocoNet system, or you can use it as a freestanding device. As such, it only works on a program track and doesn't have the resources to power even a small layout.

The PR3 was originally designed by Digitrax to enable the management of sound files in their SoundFX decoders, so the JMRI capability is secondary. I worked with this set-up and found it easy to use with a small program track, right in my office. To test my results, I'd carry the loco out to the layout.

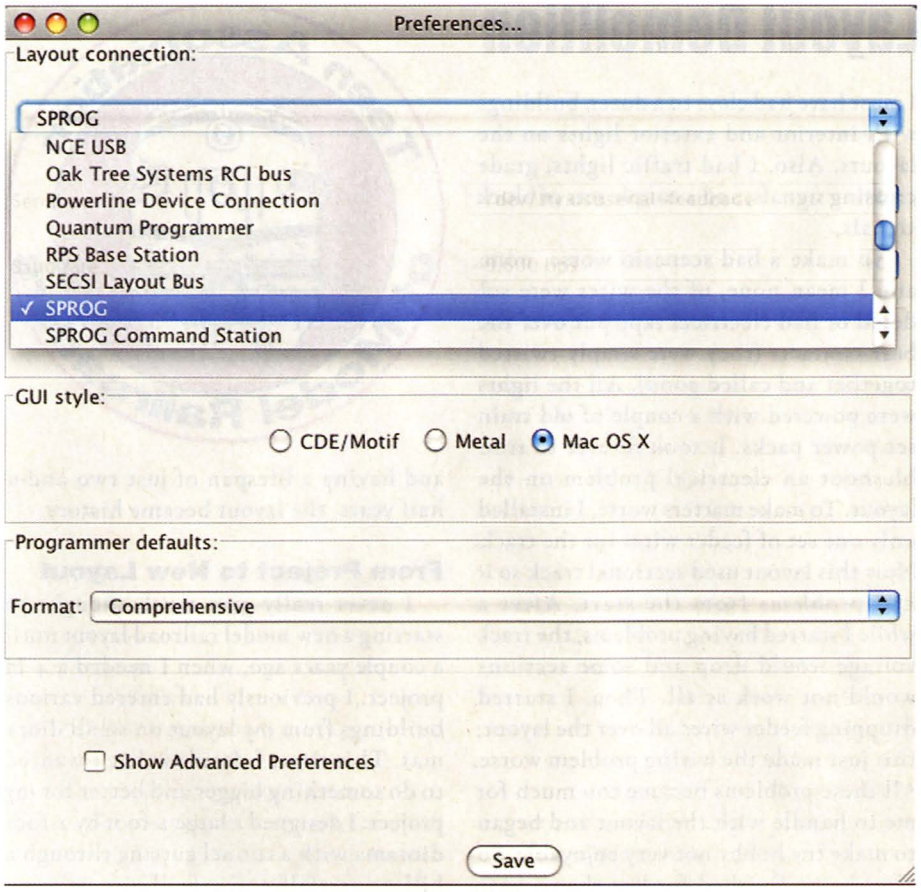
QSI Quantum Programmer

Like the PR3, the primary purpose for the QP is to program sound decoders, in this case QSI's Quantum Sound product. But it can also work with JMRI and program virtually any decoders. JMRI cannot yet download sound to QSI decoders, and so you would need to use the product's native software, which is a Windows-only release. When running on a Windows machine, you can switch between JMRI and the Quantum programming software.

While the Quantum Programmer has the power to support a small layout, the code necessary to make that happen has not been given to JMRI, so that's not a possible use at this time. That could change at any time, so this is a very good reason to drop by the JMRI web site at least monthly, just to see what new things have been added.

SPROG II

Straight from the United Kingdom is the SPROG. This item is different from the two above in some very key and fundamental ways. First, it will run trains on a layout. It doesn't have the power to run a lot of them, but then you could feed



When the Preferences window is opened, you are offered a pull-down menu of potential devices supported by JMRI. The Quantum Programmer is the fourth item down, SPROG is selected, and right below it is the SPROG Command Station. If you scrolled up from here, you'd also arrive at the Digitrax PR3.

its output into a universal booster. Second, not only will it run a single loco in the Service Mode (Programming Track), it will operate more than one in the Operations Mode (Program on the main). That makes this officially a command station.

To switch between Service and Operations mode requires the user to change the preferences and restart the program. As a result, you need to decide what you will be doing when you start it up. If you're only running one loco and want to program on the program track, then start up using the "SPROG" setting. If you wish to operate more than one loco and program on the main, set the layout connection to "SPROG Command Station." The included power supply is rated to be offering 12VDC at 1.25 amps. That means it can deliver around one amp to the tracks.

Unlike the typical command station, this offers no ports for a control cab or anything on that order. When you run trains through SPROG, you must use Decoder Pro's throttles. It may take you a bit to get used to running trains with these on-screen throttles, but once you get used to it, they are very precise and a lot of fun. In "Command Station" mode, you can open several throttles, one for each loco you might wish to run. You can then jump from window to window as you dispatch your trains.

As a programmer, I found the SPROG to be superior to many of the top-selling DCC command stations. I just received two of the new Athearn Tsunami-equipped locos and immediately had the same problem I've had with so many sound decoders. They don't want to be programmed on the program track because of current demand issues, and without the program track mode, you can't read Control Variables. Normally, I sacrifice the program track and program on the main line, which works just fine. Then I found that SPROG could read and program these decoders on the program track without any trouble at all.

Rounding it up

Potentially, any product that can use a computer to issue commands in DCC can be adapted to use by JMRI. We take it for granted with regular DCC systems, but two of these devices were designed to work with proprietary software for the purpose of managing sound files in a given company's decoders. With some support from these companies, JMRI has made them useful as a hardware interface for Decoder Pro and full decoder management.

However, I must admit I am most excited by the SPROG II. For its asking price, it is almost a must-have for anyone who wants full and easy access to all of a decoder's control variables. A businessman can toss his SPROG into a brief case along with several pieces of modular track and his favorite locomotive.

Take the time to read the decoder's manual, including downloading it from the manufacturer's web site, and then compare that to what the JMRI decoder definition offers you. For the first time, you can be ahead of the curve!

—

If you have questions, answers, suggestions, tips, or comments about DCC and the topic in this column, email me at: dcc@modelrailroadnews.com or send a letter to: DCC, c/o Model Railroad News, PO Box 1080, Merlin, OR 97532-1080

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Some Thoughts on Layout Demolition

By Jeffrey Andreski

FOR SOME, tearing down a completed layout can be an unspeakable thing to do. For others, it's just another chapter in the great book of model railroading. Many will ask how you can do such a thing as tearing down a finished layout. The answer is rather simple, yet everyone has their own personal reasons for doing it. For example, some may have to move and cannot take the layout along. Sometimes the layout is reaching the end of its useful lifespan, or a layout has been completely finished and there is nothing left to do but to start over again. But, probably the most common reason for dismantling a layout is the layout builder has reached the limit of what can be done with it. By that I mean they have learned all the skills while building the layout and want to challenge themselves further than what is currently possible.

Now, I will elaborate about some of the experiences I've had with tearing down layouts. Over the past five years, I've had to experience tearing down two HO-scale 4x8 layouts. My reason for tearing down my first layout was that I wanted something that looked more realistic. The layout's scenery consisted of a grass mat, seven pounds of sand, some plaster cloth hills, and duct tape roads. I wanted something better for a new layout.

My next layout was also a 4x8, but it was well above the standards of my previous layout. It included two double loops, with yard and industrial areas for switching, and it had almost everything you could want for a realistic layout built by a 14-year-old. It was mostly completed in the better part of a year. This is quite fast for me. Yet, as many model railroaders know, when you try to work too quickly on a layout, you skip important steps and make mistakes that you would otherwise not have made had you taken your time.

The layout used a MRC Prodigy DCC system, which eliminated the need for having electrical blocks, but it still had the dreaded rat's nest of wiring under the layout. As the layout progressed, most of the wiring was added and grew without any sense of organization or labeling. It is not a very big deal if you only have a few feeder wires and a couple of building lights, but I had ten times more than that. I must have had close to a dozen buildings with interior and exterior lights on the layouts. Also, I had traffic lights, grade crossing signals, and a couple sets of block signals.

To make a bad scenario worse, none, and I mean none, of the wires were soldered or had electrical tape put over the bare contacts (they were simply twisted together and called good). All the lights were powered with a couple of old train set power packs. It took forever to troubleshoot an electrical problem on the layout. To make matters worse, I installed only one set of feeder wires for the track. Now this layout used sectional track so it had problems from the start. After a while I started having problems; the track voltage would drop and some sections would not work at all. Then, I started dropping feeder wires all over the layout; this just made the wiring problem worse. All these problems became too much for me to handle with the layout and began to make the hobby not very enjoyable. So after being finished for less than a year, and having a lifespan of just two-and-a-half years, the layout became history.

From Project to New Layout

I never really gave much thought to starting a new model railroad layout until a couple years ago, when I needed a 4-H project. I previously had entered various buildings from my layout on small dioramas. This time, I decided that I wanted to do something bigger and better for my project. I designed a large 2-foot by 2-foot diorama with a tunnel cutting through a hill, a waterfall, and a small cottage scene.

Here is my second 4x8 layout. It worked well until electrical problems caught up with it. Also, adding accessories without proper planning caused problems. Problems and wanting something different led me to scrap the layout.

This is a very depressing picture. It looks like a nuclear bomb has hit the HO-scale town of Beaver Creek and wiped it off the map. This view is in the middle of the layout's demolition.

This diorama is the main reason that I chose to get rid of my 4x8 layout. The beautiful scenery and the overall appearance of it persuaded me to use it as a starting point for a new modular layout

I didn't want the diorama to look like my previous layouts, so I went the extra step in purchasing more variations of scenery materials to use on it. I went along and built the diorama using cardboard and foam board for its structure. It also had a scratchbuilt cottage and a lake on it. Because the diorama was built for display only, I built it with a piece of steel flex track going into the tunnel.

When I finished building the diorama, I realized that it was the best work I've ever done. It outdid my previous layout scenery tenfold. I entered it in the County Fair and it won everything it could possibly receive in its division. But after the fair, the diorama just sat around on a chair doing absolutely nothing. After a few months and all of the problems that I described above, I made the big decision to start a new layout and tear down my old one. The new layout is a modular layout, with my 2 x 2 diorama as the starting point. I needed to make some modifications to it, including wiring it for DCC and replacing the track for operational use.

Like most model railroaders, I started out building small model railroads, and with each layout my skills improved. So when the tragic time comes to replace your layout, the end result of the new, groundbreaking layout makes the grief you experienced while taking down your old layout well worth it. For a teen, replacement is much harder because of our limited resources. So if we can do it so can you.

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If you have any questions, comments, tips, or suggestions concerning this column or model railroading in general, send them to: The Future of Model Railroading, c/o Model Railroad News, P.O. Box 1080, Merlin, OR 97532-1080 or e-mail to: tamr@modelrailroadnews.com.

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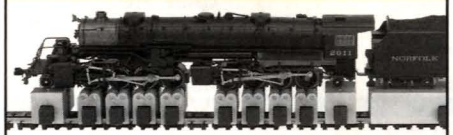

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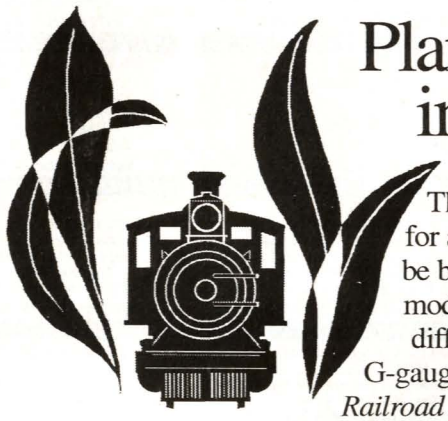
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EVENTS & ACTIVITIES

Events for the October 2009 issue must be received by August 14th, 2009

Attn. Clubs & Show Sponsors — Place your FREE event announcement in front of thousands of readers! Let them know about your special event! Send your announcement to us at least three months prior to the event for maximum coverage. Write to: Events, c/o Model Railroad News, P.O. Box 1080, Merlin, OR 97532-1080. You can fax us your event at: (541) 955-0346; or e-mail: events@modelrailroadnews.com

Free trial subscription cards of Model Railroad News are available upon request for show and meet attendees. Call, fax, or e-mail for details.

Events & Activities can be viewed online at www.ModelRailroadNews.com

California, San Diego (Balboa Park) — The San Diego Model Railroad Museum will be hosting Circus Family Day on August 16th. Families can enjoy model circus trains, making an over the top circus necklace, face painting, and all sorts of carnival games. Museum hours are from 11:00 a.m. to 4:00 p.m. Tuesday thru Friday; and from 11:00 a.m. to 5:00 p.m. Saturday and Sunday. Admission: $6.00, adults; $5.00, seniors; $3.00, students with I.D.; $2.50, active military, and children under 15 admitted free. For more information, contact: the San Diego Model Railroad Museum, 1649 El Prado, San Diego, CA 92101; call (619) 696-0199; e-mail: Aparra@sdmrm.org; or visit www.sdmrm.org

Colorado, Lakewood — The Foothills Society of Model Railroaders' Model Railroad and Toy Train Swap Meet will be held on September 19th, at Christ on the Mountain Church, 13922 W. Utah Avenue. Meet hours will be from 9:00 a.m. to 12:00 noon. Admission: $3.00, adults; $1.50, over 64 or under 12. For more information, call George, (303) 989-0087; or Eric, (303) 985-1491.

Florida, Bradenton — RealRail (formerly the Sarasota Model Railroad Club) will be open on August 8th, 25th, and on September 5th, at RealRail Rail Center, 6804 W. 14th Street # 6806. Hours will be from 10:00 a.m. to 2:00 p.m. Attractions to include operating exhibits and displays in O Scale, HO Scale, and N Scale. Admission: $2.00, adults; children 12 and under admitted free when accompanied by an adult. For more information, call: Steven Haber, (941) 321-5847; or e-mail: Steven.Haber@realrail.org

Florida, Largo — Suncoast Model Railroad Club's Train Show will be held September 19-20th, at 6340 126th Avenue. Hours will be from 10:00 a.m. to 4:00 p.m. both days. Attractions to include large model train and railroadiana show with over 100 tables. Admission: $5.00, adults 18 and older; $1.00, children 12 to 17; children 11 and younger admitted free. Club Open House with operating HO- and N-Scale layouts will be held at 12355 62nd Street North, Suite A, (across the street from the show). Admission is free for the Open House. For more information, visit: www.suncoastmrrc.com

Florida, Pinellas Park — Regal Railways will be having a Train Show on August 29th, at the Knights of Columbus Hall, 7177 58th Street North. Hours will be from 10:00 a.m. to 3:00 p.m. Attractions to include a small layout. Admission: $4.00, adults; children under 13 admitted free. For more information, call: Joe, (727) 244-1341; or visit: www.regalrailways.com

Florida, Plant City — The Western Division of The Sunshine Region of the National Model Railroad Association will be holding their Summer Meeting on August 8th, at the John Trinkle Building, located on the Plant City Campus of Hillsborough Community College, 1206 N. Park Road. Clinics will be held from 9:00 a.m. to 3:00 p.m. Attractions to include the H.B. Plant Railroad Historical Society's layouts in HO, N, O-27, and G Scale. Admission: $10.00; a light lunch will be included. For more information, contact: Gilbert Thomas, Jr., 4840 Williamstown Blvd., Lakeland, FL 33810; (863) 412-3090.

Florida, Spring Hill — Regal Railways will be holding a Train Show on September 26th, at the Knights of Columbus Hall, 10470 Spring Hill Drive. Hours will be from 10:00 a.m. to 3:00 p.m. Attractions to include a layout, and vendors. Admission: $4.00, adults; children under 13 admitted free. For more information, call: Joe, (727) 244-1341; or visit: www.regalrailways.com

Florida, The Villages — The Villages Railroad Historical Society Model Train Show & Sale will be held August 22-23, at the Lake Miona Regional Recreation Center, 1526 Buena Vista Blvd. Hours will be from 10:00 a.m. to 4:00 p.m. on Saturday, and from 10:00 a.m. to 3:00 p.m. on Sunday. Attractions to include model train and railroadiana vendors, an operating layout, and a display. Admission: $5.00, adults; children under 12 admitted free with an adult. For more information, call: Alan Goldberg, (352) 205-4322; e-mail: amgold15@hotmail.com

Idaho, Caldwell — The 2nd Annual Treasure Valley Train Expo will be held September 11-13th, at the O'Connor Field House, 2207 E. Blaine Street. Show hours will be from 12:00 noon to 8:00 p.m. on Friday and Saturday, and from 12:00 noon to 6:00 p.m. on Sunday. Attractions to include modular layouts, vender tables, modeling contests, clinics, and Operation Lifesaver. Admission: $5.00, adults; children 12 and under admitted free. For more information, contact Troy Dewey, c/o Team Dewey Toys & Hobbies, Karcher Mall, 1509 Caldwell Blvd. Ste. 19, Nampa, ID 83651; (208) 461-5028; www.treasurevalleytrainexpo.com

Illinois, Decatur — The Decatur Fall 2009 Train Fair will be held September 19-20th, at the Decatur Civic Center, 1 Gary K. Anderson Plaza, located on the corner of Eldorado and Franklin Streets. Hours will be from 10:00 a.m. to 5:00 p.m. on Saturday, and from 10:00 to 4:00 p.m. on Sunday. Attractions to include everything trains: all gauges on display and for sale, books, and memorabilia. Refreshments will be available. Admission: $4.00, adults; children 12 and under admitted free. For more information, contact: Steven Bricker, (217) 864-4397 or (217) 454-2528; e-mail: sabricker@comcast.net

Illinois, Galena — The Rock Island Technical Society will be having a Swap Meet on September 26th, at the Chestnut Mountain Resort, 8700 West Chestnut Road. Hours will be from 9:00 a.m. to 3:00 p.m. Admission: $5.00, adults; children under 12 admitted free. For more information, contact: Rock Island Technical Society, 18933 A Street, Savanna, IL 61074; call Jack Carson, (815) 273-4013, e-mail: rits1@hotmail.com; www.RITS.org. For directions to Chestnut Mountain Resort, visit: www.chestnutmtn.com

Illinois, Oak Lawn — The 7th Annual Southland Model Railroad Show will be held September 19-20th, at H. L. Richards High School, 10601 South Central Avenue. Hours will be from 10:00 a.m. to 5:00 p.m. Attractions to include over 18 operating layouts from N Scale to G Scale, safety activities including the "Smoke House," Operation Lifesaver, and fingerprinting. There will also be door prizes, raffles, and concessions. Admission: $6.00, adults; $5.00, seniors 65 or older; children under 12 admitted free. Parking is free. Show is a fundraiser for the music department at Richards High School. All proceeds to be used to offset travel expenses for the various music ensembles. For more information, contact: Joe Bandemer, (708) 423-1054; e-mail: joebandemer@sbcglobal.net

Illinois, Oak Park — The Oak Park Society of Model Engineers is seeking new members to build and operate their HO Oak River Railroad through September of 2009. The Club is open Monday, Tuesday, and Wednesday evenings from 7:30 p.m. to 9:00 p.m. at the Dole Learning Center, 251 Augusta Boulevard. For more information, call (708) 848-5716; or visit: http://aptakisic.net/opsme.htm

Kansas, Lenexa — The Turkey Creek Division of the NMRA's Train Show will be held on August 1st, at the Lenexa Community Center, 13420 Oak Street. Hours will be from 9:30 a.m. to 3:30 p.m. Attractions to include over 80 vendors, clinics, displays, and door prizes. Admission: $6.00, adults; children under 12 admitted free. For more information, contact: Louis Seibel, (913) 927-6850; e-mail: L-seibel@comcast.net

Maryland, Timonium — A Greenberg Train & Toy Show will be held August 1-2, at the Maryland State Fairgrounds, 2200 York Road. Show hours will be from 10:00 a.m. to 4:00 p.m. both days. Show will feature a huge marketplace of train, toy, and hobby dealers, operating model railroads, and instructional presentations. Admission: $7.00, adults good for both days; children under 12 admitted free. For more information, contact: Greenberg Shows, P.O. Box 34, Elmhurst, IL 60126; (630) 279-4087; e-mail: Staff@Greenbergshows.com; www.greenbergshows.com

Massachusetts, Taunton — The Old Colony Model Railroad Club Show will be held on September 27th, at Taunton Holiday Day Inn, located on Myles Standish Blvd., Rt. 495 Exit 9. Hours will be from 10:0 a.m. to 3:30 p.m. Admission: $4.00, adults; children under 12 and Scouts in uniform admitted free. For more information, contact: Dennis Ingalls, 220 Dean St., Norton, MA 02766; (508) 285-3963; e-mail: dingalls@comcast.net

Missouri, Kansas City —The Union Station Kansas City Model Railroad Society will be holding the Second Annual Train Fair on September 26-27, at Union Station Kansas City, 30 W. Pershing Road. Hours will be from 9:00 a.m. to 5:00 p.m. on Saturday, and from 10:00 a.m. to 4:00 p.m. on Sunday. Scheduled attractions to include operating layouts, railroad historical societies, Operation Lifesaver display, model train vendors, model clinics, and more. Special events are planned for kids. For more information, contact: Union Station Kansas City Model Railroad Society, 30 W. Pershing Road, Ste. 850, Kansas City, MO 64108; (913) 393-3495 or (816) 861-3449 or visit: www.unionstation.org

Missouri, Saint Louis — The Boeing Employees' Railroad Club will be having a Railroad Swap Meet on September 12th, at the Greensfelder Recreation Complex at Queeny Park, 550 Wiedman Road. Hours will be from 10:00 a.m. to 3:00 p.m Admission: $3.00, adults; children under 12 admitted free. For more information, contact: Wayne Schimmel, 733 Highway Y, Winfield, MO 63389; (636) 668-6313 (after 6:30 p.m. Central Time); e-mail: wwhtehrse@aol.com

New Jersey, Edison — A Greenberg Train & Toy Show will be held August 8-9, at the New Jersey Convention & Expo Center, 97 Sunfield Avenue. Show hours will be from 10:00 a.m. to 4:00 p.m. both days. Show will feature a huge marketplace of train, toy, and hobby dealers, operating model railroads, and instructional presentations. Admission: $7.00, adults good for both days; children under 12 admitted free. For more information, contact: Greenberg Shows, P.O. Box 34, Elmhurst, IL 60126; (630) 279-4087; e-mail: Staff@Greenbergshows.com; www.greenbergshows.com

Ohio, Greenville — The All Trains Bunch will be having an All Train Flea Market on September 13th, at Darke County Fairgrounds Coliseum, 800 State Route 49. Hours will be from 10:00 a.m. to 3:00 p.m. Admission: $3.00, adults; under 12 admitted free. For more information, contact: Larry Zeller, 1215 Camaro Court, Piqua, OH 45356; (937) 773-7186.

Oregon, Medford — The Medford Railroad Park will be open to the public on the second and fourth Sundays of each month, April through October. The Railroad Park is located adjacent to Fire Station No. 4 at the intersection of Table Rock Road and Berrydale Avenue. Hours will be from 11:00 a.m. to 3:00 p.m. The Railroad Park is a unique collaboration between Medford's Parks and Recreation Dept., and five volunteer-based railroad-related clubs. Attractions include a visitors center/museum housed within a restored 1910 caboose, a restored 1942 caboose, a restored 1928 flanger, a handcar ride, a motorcar ride, operating layouts, and the Morse Telegraph Club's antique telegraph system. Admission is free; donations are appreciated. For more information, contact: Dick, (541) 779-3002; e-mail: starkers2@msn.com; or Tony, (541) 944-9176; e-mail: spflimsie@aol.com

Pennsylvania, Allentown — The Great Lehigh Valley Train Meet will be held on September 12-13th, at Merchants Square Mall, 1901 S. 12th Street. Hours will be from 10:00 a.m. to 4:00 p.m. on Saturday, and from 10:00 a.m. to 3:00 p.m. on Sunday. Attractions to include over 12,000 square feet of model trains, parts, railroadiana, operating layouts, door prizes, and more. Admission: $5.00, adults; children 12 and under admitted free with an adult. For more information, contact: Valley Rail Promotions, P.O. Box 64, Coplay, PA 18037; (610) 440-0487; www.valleygoto.com

Pennsylvania, Oaks — A Greenberg Train & Toy Show will be held August 15-16, at the Greater Philadelphia Expo Center, 100 Station Avenue. Show hours will be from 10:00 a.m. to 4:00 p.m. both days. Show will feature a huge marketplace of train, toy, and hobby dealers, operating model railroads, and instructional presentations. Admission: $7.00, adults, good for both days; children under 12 admitted free. For more information, contact: Greenberg Shows, P.O. Box 34, Elmhurst, IL 60126; (630) 279-4087; e-mail: Staff@Greenbergshows.com; www.greenbergshows.com

Texas, Temple — The Central Texas Area Model Railroaders will be hosting their 27th Annual Temple Model Train Show on September 19-20th, at the Frank Mayborn Convention Center, 2 N. Main Street. Hours will be from 10:00 a.m. to 5:00 p.m. on Saturday, and from 11:00 a.m. to 5:00 p.m. on Sunday. Attractions will include model railroad exhibits, a swap meet, videos, door and raffle prizes, and how-to clinics. Admission good for both days: $5.00, adults; children 12 and under admitted free with an adult. Discount for seniors, active duty military, and their dependents. For more information, e-mail: trainshow@centramod.org; or visit: www.centramod.org

Virginia, Chantilly — A Greenberg Train & Toy Show will be held August 22-23, at the Dulles Expo and Convention Center, 4320 Chantilly Shopping Center. Show hours will be from 10:00 a.m. to 4:00 p.m. both days. Show will feature a huge marketplace of train, toy, and hobby dealers, operating model railroads, and instructional presentations. Admission: $7.00, adults, good for both days; children under 12 admitted free. For more information, contact: Greenberg Shows, P.O. Box 34, Elmhurst, IL 60126; (630) 279-4087; e-mail: Staff@Greenbergshows.com; www.greenbergshows.com

Virginia, Virginia Beach — Tidewater Division Model Railroaders' 20th Annual Train Show and Sale will be held September 19-20th, at Virginia Beach Convention Center, 1000 19th Street. Hours will be from 10:00 a.m. to 4:00 p.m. both days. Attractions will include operating trains in various gauges, Lego trains, test tracks, train doctors, Operation Lifesaver, train sets, scenery supplies, books, videos, track, memorabilia, tools for sale, and white elephant tables. Scouts may work toward a merit badge in model railroading. Door prizes will be drawn every hour. Admission: $7.00, adults; children under 12 admitted free with an adult; Scouts in uniform with scout leaders in uniform admitted free. $1.00 from every paid admission will go to "Toys For Tots." For more information, call: (757) 426-2811; e-mail: nawneycreek@msn.com; visit the division web site: http://nmra-mer-tidewater.org; or view a map at: http://virginiabeachconventioncenter.com

MRN: A Year in Review

As a courtesy to our readers, we have compiled an index featuring every product reviewed in the pages of MRN over the past year. We hope you find it useful.

July 2009

Project DCC, Part 10B: Manual Computer Control with Layout Commander & Train Controller
American Limited Models (N) Sand Tower
Blair Line (N) A to Z Used Car Lot Kit
ExactRail (N) Hy-Cube, Vert-a-Pac & Covered Hoppers
Lionel (O) UP Heritage Scheme SD70ACe Diesel Locomotive
Marklin (HO) *Rheingold Express* & Central Station Command Station
Micro-Trains (N) SP C-50-9 Caboose
Walthers (HO) GP15-1 Diesel Locomotive & Diesel Tug and Car Float Kits
Vollmer (HO) Jeep Wrangler Rubicon
Woodland Scenics (G) Whistle While He Works Figure Set

June 2009

Project DCC, Part 10A: Manual Computer Control with Panel Pro & STP
Athearn (N) Overland Passenger Cars & (HO) F45/FP45
Atlas O & NCE (O & DCC) 2-Rail O-Scale Primer
Blair Line (N & HO) Section House Kit
Bridgewerks Mini-Mag 3-S DC Power Controller
Hayes Publishing (Book) *Western Pacific Depots and Stations*
Kato (N) Pennsy NW2 Switchers
Pennsylvania Heritage Models (HO) Track Cover System
Piko (G) Qwik Kit Structure Kits
Rivarossi (HO) 60-Foot Passenger Cars
River Point Station (HO) Ford Expedition

May 2009

Project DCC, Part 9B: Using Your PC to Control Your Layout
Athearn (N) PS-1 Double Door Boxcars & (HO) Spine Car Set
Atlas O (O) Amtrk Dash 8 & Horizon Passenger Cars
Bachmann (Fn3) 2-6-6-2 Steam Locomotive
Banta (O) Inspection Cab kit for Bachmann 4-4-0
Broadway Limited (HO) Paragon2 C60AC Diesel Locomotive
Busch (HO) *Ape* Delivery Truck & *Smart ForTwo* Car
ExactRails (HO) Gondola, Hy-Cube, & Vert-A-Pack, Plus Interview
Kato (N) EMD E8/E9 Diesel Locomotive
Southcoast Scale Models (HO) Samuel J. Rizzler Paper Co. Kit

April 2009

Project DCC, Part 9A: Computer Control Introduction
Athearn (HO) Genesis SD60M Diesel Locomotive
CMW (HO) Utility Truck
Charles Smiley (DVD) *Your Colorful Southern Pacific*
Kato (N) *Broadway Limited* Passenger Car Set & Add On
MTH (O) Premier Line Dash 8 Diesel Locomotive
Micro-Trains (Z) ACF Passenger Car Set
Piko (Large) Garden Train Set
Rivarossi (HO) 4-8-8-4 *Big Boy* Steam Locomotive
Sunset Models (HO) Brass SP Mogul Steam Locomotive
Walthers (N) Cornerstone Sanding Tower Kit & (HO) *Hiawatha* Set Conclusion

March 2009

Project DCC, Part 8 Integrating a Grade Crossing
Aristo-Craft (L) 2-Bay Hopper
Atlas (N) Code 65 True-Track & (HO) Covered Hopper
Bachmann (On30) Railbus and Trailer & (Book) *E-Z Model Railroads*
Banta (HO, S & O) Railroad Signs
Bar Mills (HO & O) Gas Stop
Bluford Shops (N) Auto Boxcars
Broadway Limited (HO) 2-10-2 Steam Locomotive
Drail Modelspoor (Windows PC) *AnyRail Layout Design Software*
Norscot (HO) Caterpillar D9T Bulldozer
S Helper (S) CNJ Cement Car
USA Trains (1:29) *Docksider* 0-6-0T Steam Locomotive

February 2009

Project DCC, Part 7B Signal System Wiring
Aristo-Craft (DVD) *How Model Trains Are Made*
Atlas O (O) MP15 Locomotive
Bachmann (1:20.3) Davenport Critter Mechanical Locomotive
Broadway Limited C30-7
Digitrax (Z, N & HO) DZ125 Decoder
Kato (N) Southern Pacific PA-1 & PB-1 Diesel Locos & GG1 Electric Locomotive
Lenz (DCC) Lenz Set-100 Starter Set Upgrade
Matysik Display Shelf (Multi Scale) Display Shelves
Old and Weary (HO) Tappan Station
Piko (1:22.5) Taurus Locomotive
Seivers Benchwork (ALL) Benchwork Section Kits
Walthers (HO) H-10-44 Diesel Loco & Everett Street Station

January 2009

Project DCC, Part 7A Signal System Wiring
Special Report: Kader Buys Sada Kan
Athearn (N) F45/FP45 Diesel Locomotive & (HO) Checker Cab
Faller (N) Animated Car System
Grand River Models (S) Greg's Grocery Kit
MRC (DCC) 1820 Sound Decoder for Athearn RS3 Locomotive
MTH (HO) NYC 4-8-2 *Mohawk* & (O) CA-1 Caboose
Signature Press (Book) *Southern Pacific Freight Cars, Vol 5*
Walthers (HO) *Hiawatha* Diner and Tap Lounge & RS-2/RSC-2

December 2008

Aristo-Craft (1:29) 40-Foot Boxcars
Athearn (N) Ford C Rescue Trucks, (HO) CSX & Santa Fe Train Sets, (HO) F-7A/B Diesel Locomotive
Atlas (N) Trainman Train Set
Atlas O (O) Industrial Rail Starter Set
Bachmann (Track) E-Z Command DCC Turnouts
Blair Lines (HO) *Pizzaland* Kit
MTH (HO) Railking Scale Diesel Starter Set
Steamscenes (Calendars) 2009 Railroad Themed Calendars
Piko (HO) ICE-3 Train Set
Tokyo Marui (Z) Night Train Set

November 2008

Project DC, Part 6: Turnout Control Wiring
Athearn, Kato & Walthers (HO) Intermodal Cars
Atlas O (O) Master Line, Train Man & Industrial Rail Freight Car Roundup
Bachmann (Fn3) Boxcar
Charles Smiley (Video) *Key System Scrapbook*
Con-Cor (HO) Union Pacific M-10000
GC Laser (N & HO) Utility Truck Toolbox Kit
Granite Creek (On3) Logging Cars
Noch (HO) Shed/Kiosk Kit
Pine Canyon (S0 Professional Building Kit
Preiser (HO) Vegetable Wagon
Smoky Mountian (S) 41-foot Flat Car Kit
Train Control System (DCC & N) Decoder for "Classic N" Locomotives

October 2008

Special Coverage: MTH/MKT Trade Secret Lawsuit Settled
Project DCC Part 5: Track Assembly, Wiring, & Block Detection
Atlas (N) C420 Diesel Locomotive
Bachmann (HO) Peter Witt-Style Street Car
BVRR Specialties (Tool) Maxi-Grip Screw Starter
Grizzly Mountain Engineering (O) Farmers & Freight Wagons
Kadee (HO) Cushion Underframe Boxcars
Kato (N) Gunderson MAXI-IV Well Cars
Lionel (O) Legacy-Equipped FEF-3 Steam Locomotive
NCE (Electronics) DCC Wireless System
NSLC (Tool) Flamingo Glue
Oak Tree Systems (Electronics) SC-2 Servo Controller
Preiser (O) American Railroad Figures
Ye Olde Huff N Puff (On30) Freight Car Kits

September 2008

Special Coverage: NMRA 2008 National Train Show
Project DCC Part 4: Layout Configuration
Banta/Bachmann (On30) Boxcar Body Conversion Kit
Factory Direct Trains (HO) Trackmobile
Golden West Books (Book) *West Coast Interurbans-California*
Lionel (O) Legacy 990 Command Control System
MTH (HO) GS4 4-8-4 *Daylight* (O) Railking SW1 Diesel Locomotive
Red Caboose (HO) S-40-5 Stock Cars
Smokey Mountain Model Works (S) Ventilated Boxcars
Tomix (N) Freight and Fire Trucks
Wheels of Time (N) Harriman Passenger Cars
Woodland Scenics (O) Scenic Accent Figures

August 2008

Project DCC Part 3: DCC System Familiarization
Allen Keller (DVD) *Great Model Trains Vol. 58*
Aristo-Craft (1:24) C-16 Steam Locomotive
Bachmann (All Scales) DCC Control System, (Fn3) Tank Cars
Brass Trains (Book) *Brass Model Trains Price & Data Guide Vol. 1*
Broadway Limited (HO) Union Pacific Big Boy Steam Locomotive
Intermountain (N) SD45-2 Diesel Locomotive and Wood Deck Flat Car
Kato (N) Daylight Northern 4-8-4 GS 4 Steam Locomotive Set
MTH O) 19th Century Wood Coaches
Sidetrack Laser (HO) Cougar Ridge Lumber Co.
Siflor (All Scales) Landscaping Material
Walthers (HO) Proto 2000 Early EMD Road Switchers

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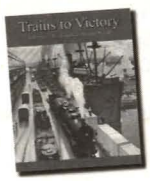

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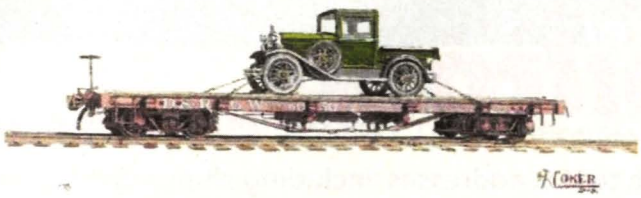

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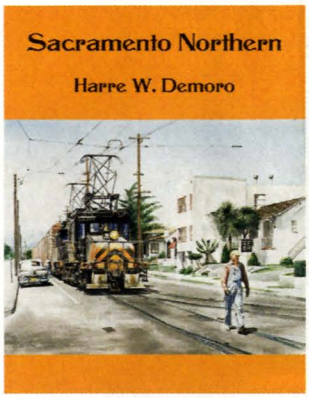

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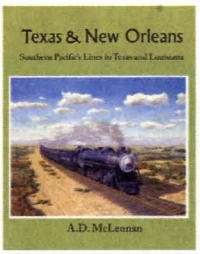

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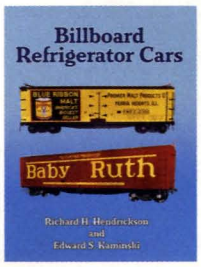

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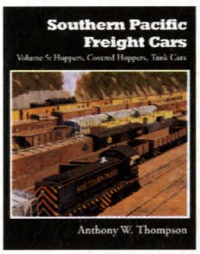

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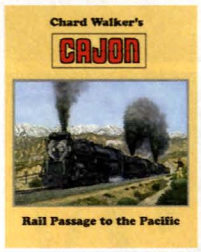

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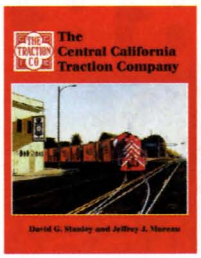

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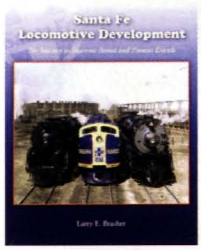

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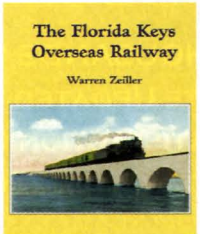

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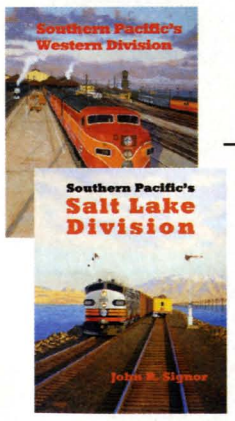

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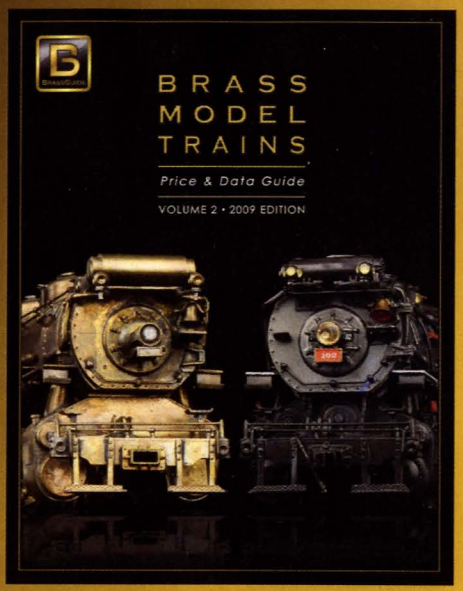

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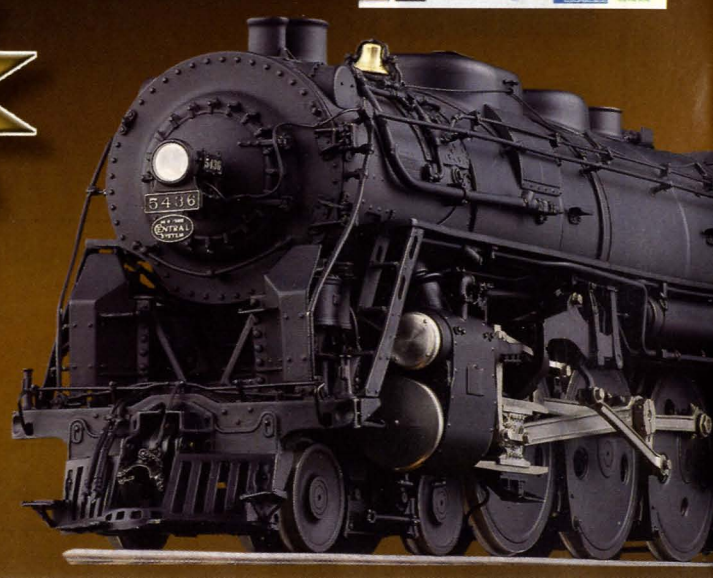

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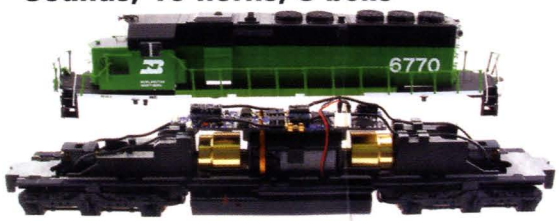

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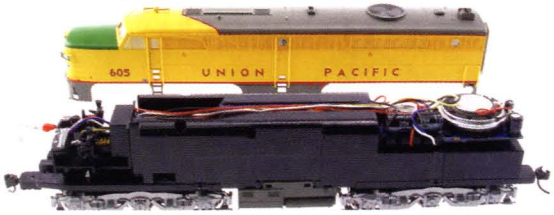

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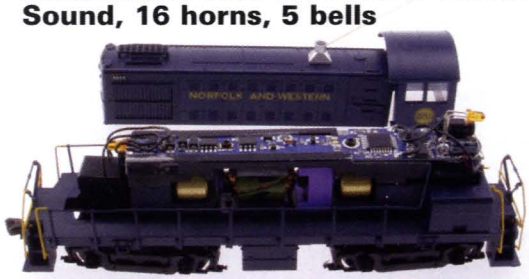

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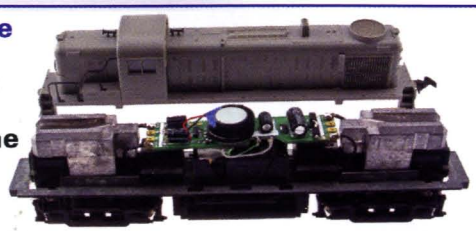

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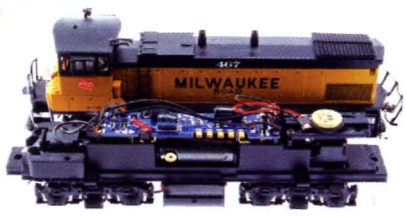

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